Introduction

Holtek Semiconductor was established in 1983 and to the present day the company has released an unceasing stream of competitive semiconductor devices onto the global market. While the Holtek design teams continue to focus their development efforts in the 8-bit and 32-bit microcontroller development area, it would be easy to ignore the wide range of peripheral semiconductor products also present within Holtek's design sphere. Underpinning these successful product developments is of course the many years of semiconductor design experience accumulated by the company's professional engineering design teams. These efforts have resulted in providing Holtek customers with a wide range of high quality industrial grade semiconductor devices. Many of today's popular global brand consumer appliances and industrial products are major users of Holtek's devices, which in today's highly competitive semiconductor market illustrates their confidence in the company's products. Holtek remains fully committed to the continuous expansion of its high quality and superior price-performance semiconductor devices well into the future.

Product Device Range

The Holtek product development focus will remain firmly in the microcontroller region for both 8-bit and ARM core based 32-bit microcontrollers. Internal functions of these microcontrollers includes an extensive range of fully integrated digital and analog features such as A/D converters, comparators, LCD drivers, PWM generators, high current LED drivers, touch switches, SPI/I^{2}C, UART and USB interfaces, voice functions, RF functions etc. Its 32- bit and 8-bit microcontroller devices meet with full industry specifications in having a wide voltage and temperature operating range. Complementing its microcontrollers are a wide range of peripheral devices such as stand alone touch switch ICs, LCD drivers, power management devices, video processors etc. The company is also expanding its range of functional modules such as PIR modules, infrared modules, temperature/humidity modules etc further expanding the diversity of the Holtek range and opening up the application areas into a wider market area.

Product Development Strategy

In line with 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 Internet of Things − IOT − continues to reach into society's demands for an increasingly connected lifestyle, the Holtek multi-function product range stands well placed to embed itself into this fast expanding market area. The integration of features such as RF functions, voice, touch key and power management functions into its microcontroller range show this commitment to IOT product trends. Holtek's range of standard microcontroller products will continue to expand but along with it will be the design of application specific products such as those for motor control, personal health care, home appliances etc. With its long history of working together with customers to design their custom microcontrollers, Holtek welcomes product manufacturers to discuss possible new custom microcontroller design possibilities. Additionally and as no functionally rich microcontroller is useful without a suitable development platform, all of Holtek's products are fully supported by a comprehensive range of hardware and software development tools to simplify the designer's 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 an established 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 both 8-bit and 32-bit microcontroller devices covers 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 best 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.

Contents

8-Bit Flash MCU

Small Package Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Time Base	Timer Module	Comp.	Stack	Package
HT66F302	4MHz 8MHz	1.8V~ 5.5V	4MHz, 8MHz or 32kHz	1K×14	64×8	32×8	8	12-bit×4	2	10-bit STM×1 10-bit PTM×1	—	2	10SOP
HT68F002	8MHz	2.2V~ 5.5V	8MHz or 32kHz	1K×14	64×8	32×8	8	—	2	10-bit STM×1	—	2	10MSOP
HT66F002								12-bit×4				2	10MSOP
HT68F0025				2K×14				—				4	10SOP
HT66F0025								12-bit×4				4	10SOP
HT66F007	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	2K×16	160×8	512×8	8	12-bit×5	2	10-bit CTM×2 16-bit STM×1	1	8	10MSOP
HT66F008	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	4K×16	256×8	1024×8	8	12-bit×5	2	10-bit CTM×2 16-bit STM×1	1	8	10MSOP

A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	A/D	Timer Module	Stack	Package
HT66F13	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	1K×14	64×8	18	12-bit×4	10-bit STM×1	4	16NSOP
HT66F14	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×15	96×8	22	12-bit×4	10-bit CTM×1 10-bit STM×1	4	16NSOP 20SOP
HT66F15	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	4K×15	192×8	26	12-bit×4	10-bit CTM×1 10-bit ETM×1	8	16NSOP/SSOP 24SOP

A/D Flash MCU with High Current LED Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LED Driver Output	LED Share I/O	A/D	Timer Module	Stack	Package
HT66F24D	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×16	96×8	64×8	22	8×6	14	12-bit×8	10-bit CTM×1 10-bit STM×1	8	16NSOP 20/24SOP
HT66F25D	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	4K×16	192×8	64×8	26	8×8	16	12-bit×8	10-bit CTM×1 10-bit ETM×1	8	20/24/28SOP
HT66F26D	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	8K×16	384×8	64×8	26	8×8	16	12-bit×8	10-bit CTM×1 10-bit STM×1 10-bit ETM×1	8	24/28SOP

Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	A/D	Timer Module	Comp.	Interface	Stack	Package
HT66F20-1	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	1K×16	64×8	32×8	18	√	12-bit×8	10-bit CTM×1 10-bit STM×1	2	SPI/I²C×1	4	16NSOP/SSOP 20SOP/SSOP
HT68F20-1									—					
HT66F30-1	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	2K×16	96×8	64×8	22	√	12-bit×8	10-bit CTM×1 10-bit ETM×1	2	SPI/I²C×1	4	16NSOP/SSOP 20/24SOP/SSOP
HT68F30-1									—					
HT66F40	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	4K×15	192×8	128×8	42	√	12-bit×8	10-bit CTM×1 16-bit STM×1	2	SPI/I²C×1	8	24/28SOP/SSOP 32/48QFN
HT68F40									—					
HT66F50	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	8K×16	384×8	256×8	42	√	12-bit×8	10-bit CTM×2 10-bit ETM×1 16-bit STM×1	2	SPI/I²C×1	8	28SOP/SSOP 48QFN
HT68F50									—					
HT66F60	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	12K×16	576×8	256×8	42	√	12-bit×12	10-bit CTM×2 10-bit ETM×1 16-bit STM×1	2	SPI/I²C×1	12	28SOP 48LQFP/QFN
HT66F60A	8MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	16K×16	1024×8	128×8	61	√	12-bit×12	10-bit CTM×2 10-bit ETM×1 16-bit STM×3	2	SPI/I²C×1	16	48/64LQFP
HT66F70A	8MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	32K×16	2048×8	128×8	61	√	12-bit×12	10-bit CTM×2 10-bit ETM×1 16-bit STM×3	2	SPI/I²C×1	16	48/64LQFP

Note: 1. All devices include a fully integrated RC system oscillator.
    2. Four I/O lines on each device can be configured as software LCD COM driver pins.

8-Bit Flash MCU

Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Time Base	Timer Module	R-type LCD	Stack	Package
HT68F003	8MHz	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×8	14	—	2	10-bit STM×1	—	2	16NSOP
HT66F003								12-bit×4		10-bit PTM×1			
HT66F004	8MHz	2.2V~5.5V	8MHz or 32kHz	2K×15	96×8	32×8	18	12-bit×8	2	10-bit PTM×2	4SCOM	4	16NSOP 20DIP/SOP/SSOP

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	A/D	Timer Module	Comp.	R-type LCD (1/3 Bias)	High Current LED Output	Inter-face	Stack	Package
HT66F016	8MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	1K×16	64×8	64×8	14	—	12-bit ×4	16-bit STM×1	1	—	—	—	4	16NSOP/SSOP
HT66F017	8MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×16	128×8	64×8	14	—	12-bit ×4	16-bit CTM×1 16-bit STM×1	1	—	—	—	8	16NSOP/SSOP
HT66F0172	8MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×16	128×8	—	18		—			—	—	—	8	20SOP/SSOP
HT66F0174	8MHz					—	18		12-bit ×8	10-bit PTM×2	—			SPI/I²C×1		20/24SOP/SSOP
HT66F0175	8MHz 12MHz					64×8	22	√				6(SCOM/SSEG) +14SSEG	22	SPI/I²C×1		16/20NSOP
HT66F0176	16MHz													SPI/I²C×1 UART×1		24SOP/SSOP
HT66F0182	8MHz		8MHz or 32kHz		128×8	—	18	—		10-bit PTM×1 10-bit STM×1	—	—			6	16/20NSOP
HT66F018	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	4K×16	192×8	64×8	18	√	12-bit ×8	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	1	6(SCOM/SSEG) +18SSEG	26	SPI/I²C×1 UART×1	8	16NSOP 20SOP/SSOP
HT66F0185					256×8	128×8	26									24/28SOP/SSOP
HT66F0186					1024×8	4096×8	26									20NSOP 24/28SOP/SSOP
HT66F0187					256×8	64×8	46			10-bit PTM×1 16-bit STM×2		4SCOM (1/2 Bias)	46			44/48LQFP

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	A/D	Time Base	Timer Module	R-type LCD	High Current LED Output	Inter-face	Stack	Package
HT66F0042	8MHz 12MHz 16MHz	2.2V~5.5V	32kHz~16MHz	2K×15	96×8	32×8	22	√	12-bit ×8	2	10-bit PTM×4 10-bit CTM×2	4SCOM	22	SPI/I²C×1	6	20/24 SOP/SSOP
HT66F0082	8MHz 12MHz 16MHz	2.2V~5.5V	32kHz~16MHz	4K×16	128×8	64×8	26	√	12-bit ×8	2	10-bit PTM×4 10-bit CTM×2	4SCOM	26	SPI/I²C×1 UART×1	6	24/28 SOP/SSOP

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

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	R-type LCD (1/3 Bias)	High Current LED Output	Timer Module	RTC	A/D	Inter-face	Stack	Package
HT66F489	8MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	8K×16	384×8	64×8	26	6(SCOM/SSEG) +20SSEG	26	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	√	12-bit ×8	SPI/I²C×1 UART×1	8	28SOP 28SSOP

Advanced A/D Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	R-Type LCD	RTC	A/D	Timer Module	Comp.	Inter-face	CRC	Stack	Package
HT66F2350	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	8K×16	768×8	256×8	44	SCOM	√	12-bit ×12	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	2	SPI/I²C×1 SPIA×1 UART×2	√	16	48LQFP
HT66F2360	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	1536×8	256×8	58	SCOM	√	12-bit ×16	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	2	SPI/I²C×1 SPIA×1 UART×2	√	16	48/64LQFP
HT66F2370	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	3072×8	512×8	58	SCOM	√	12-bit ×16	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	2	SPI/I²C×1 SPIA×1 UART×3	√	16	48/64LQFP
HT66F2390	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	64K×16	4096×8	1024×8	58	SCOM	√	12-bit ×16	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	2	SPI/I²C×1 SPIA×1 UART×3	√	16	48/64LQFP

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

8-Bit OTP MCU

Cost-Effective I/O OTP MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	PFD	Stack	Package
HT48R002	8MHz	2.3V~5.5V	8MHz	1K×14	64×8	8	1	—	2	10MSOP
HT48R003	8MHz	2.3V~5.5V	8MHz	1K×14	64×8	14	1	√	2	16DIP/NSOP

Note: All devices include a fully integrated RC system oscillator.

Cost-Effective A/D OTP MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	A/D	PWM	PFD	Stack	Package
HT46R002	8MHz	2.3V~5.5V	8MHz	1K×14	64×8	8	1	12-bit×4	8-bit×1	—	2	10MSOP
HT46R003	8MHz	2.3V~5.5V	8MHz	1K×14	64×8	14	1	12-bit×4	8-bit×1	√	2	16DIP/NSOP
HT46R003B								12-bit×5			4	
HT46R004	8MHz	2.3V~5.5V	8MHz	2K×14	96×8	18	1	12-bit×8	8-bit×1	√	4	16DIP/NSOP 20DIP/NSOP/SOP

Note: All devices include a fully integrated RC system oscillator.

General I/O OTP MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	RTC	R-Type LCD	PFD	Stack	Package
HT48R063B	4MHz 8MHz 12MHz	2.2V~5.5V	32kHz~12MHz	1K×14	64×8	14	1	√	—	√	2	16NSOP
HT48R064B	4MHz 8MHz 12MHz	2.2V~5.5V	32kHz~12MHz	1K×14	64×8	22	1	√	4SCOM	√	4	16NSOP 20/24SOP/SSOP
HT48R065B	4MHz 8MHz 12MHz	2.2V~5.5V	32kHz~12MHz	2K×15	96×8	26	1	√	4SCOM	√	4	16NSOP 20/24/28SOP/SSOP
HT48R066B	4MHz 8MHz 12MHz	2.2V~5.5V	32kHz~12MHz	4K×15	128×8	26	2	√	4SCOM	√	4	16NSOP 20/24/28SOP/SSOP

Note: All devices include a fully integrated RC system oscillator.

General A/D OTP MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	RTC	A/D	PWM	R-Type LCD	PFD	Stack	Package
HT46R064B	4MHz 8MHz 12MHz	2.2V~5.5V	32kHz~12MHz	1K×14	64×8	18	1	√	12-bit×4	8-bit×1	—	√	4	16NSOP 20SOP
HT46R065B	4MHz 8MHz 12MHz	2.2V~5.5V	32kHz~12MHz	2K×15	96×8	22	2	√	12-bit×4	8-bit×1	4SCOM	√	6	16NSOP 20/24SOP/SSOP
HT46R066B	4MHz 8MHz 12MHz	2.2V~5.5V	32kHz~12MHz	4K×15	128×8	26	2	√	12-bit×8	8-bit×2	4SCOM	√	6	16NSOP 20/24/28SOP/SSOP
HT46R0662	4MHz 8MHz 12MHz	2.2V~5.5V	32kHz~12MHz	4K×15	224×8	42	2	√ (*)	12-bit×8	8-bit×2	4SCOM	√	6	24/28SOP/SSOP 44LQFP
HT46R0664	4MHz 8MHz 12MHz	2.2V~5.5V	32kHz~12MHz	4K×16	224×8	42	2	√ (*)	12-bit×12	8-bit×2	19×8 23×4	√	6	44LQFP
HT46R067	4MHz 8MHz 12MHz	2.2V~5.5V	32kHz~12MHz	8K×16	384×8	42	3	√ (*)	12-bit×8	8-bit×3	4SCOM	√	8	24/28SOP/SSOP 44LQFP

Note: 1. All devices include a fully integrated RC system oscillator.
2. * RTC is implemented by TinyPower structure.
3. The HT46R0664 includes a complete LCD driver function - pin compatible with Samsung S3F9488.

32-Bit Flash MCU

Cortex-M0+ 32-Bit Standard MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timers[1]	Cap.[2] or PWM Cpm. PWM[3]	WDT	RTC	SCI[4]	USB[5]	EBI[6]	I²S	Interface	Others	I/O	Package
HT32F52220	40MHz	2.0V ~ 3.6V	16KB	4KB	—	1 Msps 12-bit ×8	—	BFTM×1 SCTM×2 GPTM×1	6 —	√	—	—	—	—	—	USART×1 UART×1 SPI×1 I²C×1	—	19 23	24SSOP 28SSOP
HT32F52230			32KB	4KB														23	33QFN
HT32F52231	40MHz	2.0V ~ 3.6V	32KB	4KB	—	1 Msps 12-bit ×12	—	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12 3	√	√	—	—	—	—	USART×1 UART×2 SPI×2 I²C×2	CRC	19 23	24SSOP 28SSOP
HT32F52241*			64KB	8KB														26 40	33QFN 48LQFP
HT32F52243*	40MHz	2.0V ~ 3.6V	64KB	8KB	6CH	1 Msps 12-bit ×12	—	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12 3	√	√	—	—	—	—	USART×1 UART×4 SPI×2 I²C×3	CRC	26 40	33QFN 48LQFP
HT32F52253*			128KB	16KB														52	64LQFP
HT32F52331	48MHz	2.0V ~ 3.6V	32KB	4KB		1 Msps 12-bit ×12	—	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12 3	√	√	1	—	—	—	USART×1 UART×2 SPI×2 I²C×2	CRC	24 38	33QFN 48LQFP
HT32F52341			64KB	8KB															
HT32F52342	48MHz	2.0V ~ 3.6V	64KB	8KB	6CH	1 Msps 12-bit ×12	2	BFTM×2 SCTM×2 GPTM×2 MCTM×2	14 3	√	√	2	√	√	√	USART×2 UART×2 SPI×2 I²C×2	CRC	26 39	33QFN 48LQFP
HT32F52352			128KB	16KB														51	64LQFP

Cortex-M3 32-Bit Standard MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timers[1]	Cap.[2] or PWM Cpm. PWM[3]	WDT	RTC	SCI[4]	USB[5]	EBI[6]	I²S	Interface	Others	I/O	Package
HT32F1755	72MHz	2.7V ~ 3.6V	128KB	32KB	12CH	1 Msps 12-bit ×8	2[7]	BFTM×2 GPTM×2 MCTM×1	12 3	√	√	1	√	—	—	USART×2 SPI×2 I²C×2	—	33 47	48QFN 48/64LQFP
HT32F1765			128KB	64KB														80	100LQFP
HT32F1653	72MHz	2.7V ~ 3.6V	32KB	8KB	8CH	1 Msps 12-bit ×12	2	BFTM×2 GPTM×2 MCTM×2	16 6	√	√	1	√	√	√	USART×2 UART×2 SPI×2 I²C×2	CRC	37 51	48LQFP 64LQFP
HT32F1654			64KB	16KB															
HT32F1655			128KB	32KB		1 Msps 12-bit ×16	2[7]											35 49	48LQFP 64LQFP
HT32F1656			256KB	32KB														80	100LQFP
HT32F12345*	96MHz	2.0V ~ 3.6V	64KB	16KB	12CH	1 Msps 12-bit ×12	2	BFTM×2 GPTM×2 MCTM×2	16 6	√	√	√	√	√	√	SDIO×1 USART×2 UART×2 SPI×2 I²C×2	CRC	37 51	48LQFP 64LQFP
HT32F12365*	96MHz	2.0V ~ 3.6V	256KB	64KB	12CH	1 Msps 12-bit ×16	2	BFTM×2 GPTM×2 MCTM×2	16 6	√	√	2	√	√	√	SDIO×1 USART×2 UART×2 SPI×2 I²C×2	CRC AES	37 51 80	48LQFP 64LQFP 100LQFP
HT32F12366*			256KB	128KB															

Cortex-M3 32-Bit Special-Purpose MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timers[1]	Cap.[2] or PWM Cpm. PWM[3]	WDT	RTC	SCI[4]	USB[5]	EBI[6]	I²S	Interface	Others	I/O	Package
HT32F2755	72MHz	2.7V ~ 3.6V	128KB	64KB	12CH	1 Msps 12-bit ×8	2[7]	BFTM×2 GPTM×2 MCTM×1	12 3	√	√	1	√	—	—	USART×2 SPI×2 I²C×2	CSIF[8]	33 47 80	48QFN 48/64LQFP 100LQFP
HT32F22366*	96MHz	2.0V ~ 3.6V	256KB	128KB	12CH	1 Msps 12-bit ×16	2	BFTM×2 GPTM×2 MCTM×2	16 6	√	√	2	√	√	√	SDIO×1 USART×2 UART×2 SPI×2 I²C×2	CRC AES CSIF[8]	37 51 80	48LQFP 64LQFP 100LQFP

* Under development, available in 1Q, 2017.
Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timers, GPTM: General-Purpose Timers, MCTM: Motor Control Timer
2. Cap.: Input Capture
3. Cpm. PWM: Complementary PWM for 3-phase motor control or inverter application
4. SCI: ISO7816-3 Smart Card Interface
5. USB 2.0 Full Speed device
6. EBI: External Bus Interface for NOR Flash / SRAM / LCD
7. Operational Amplifier with optional Comparator function
8. CSIF: CMOS Sensor Interface

LCD Display Flash MCU

TinyPower™ Flash MCU with LCD & EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Segment Shared I/O	Timer Module	RTC	Stack	Package
HT69F30A	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	2K×16	128×8	64×8	39	24×4 25×3	24	10-bit CTM×1 10-bit STM×1	√	4	48LQFP
HT69F40A	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×16	256×8	128×8	51	36×4 37×3	32	10-bit CTM×1 10-bit STM×1 10-bit ETM×1	√	8	48/64LQFP
HT69F50A	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	384×8	128×8	63	48×4 49×3	40	10-bit CTM×1 10-bit ETM×1 16-bit STM×1	√	8	48/64/80LQFP

TinyPower™ A/D Flash MCU with LCD & EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Segment Shared I/O	Timer Module	RTC	A/D	IAP	Comp.	Interface	Stack	Package
HT67F30	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	2K×15	128×8	64×8	32	20×4 21×3	16	10-bit CTM×1 10-bit ETM×1	√	12-bit ×8	—	2	SPI/I²C×1 SPIA×1	4	48LQFP
HT67F40	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×15	256×8	128×8	44	32×4 33×3	24	10-bit CTM×1 10-bit ETM×1 16-bit STM×1	√	12-bit ×8	—	2	SPI/I²C×1 SPIA×1	8	48/64 LQFP
HT67F50	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	384×8	256×8	52	40×4 41×3	24	10-bit CTM×2 10-bit ETM×1 16-bit STM×1	√	12-bit ×8	—	2	SPI/I²C×1 SPIA×1	8	48/64/80 LQFP
HT67F60A	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1024×8	128×8	47	56×4	32	10-bit CTM×2 10-bit ETM×1 16-bit STM×3	√	12-bit ×12	√	2	SPI/I²C×1 SPIA×1	16	48/64/80 LQFP
HT67F70A	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	2048×8	128×8	47	56×4	32	10-bit CTM×2 10-bit ETM×1 16-bit STM×3	√	12-bit ×12	√	2	SPI/I²C×1 SPIA×1	16	48/64/80 LQFP
HT67F86A	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	48K×16	2304×8	128×8	20	64×16	—	10-bit PTM×3 16-bit STM×1	√	12-bit ×12	√	—	SPI/I²C×1 SPIA×1 UART×1	16	Dice

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Segment Shared I/O	High Current LED Output	Timer Module	RTC	A/D	Interface	Stack	Package
HT67F489	8MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	64×8	42	20×8 20×4	20	8	10-bit CTM×3 10-bit PTM×1	√	12-bit ×10	UART×1	8	44LQFP
HT67F4892					384×8		50	32×4/32×8 28×4/28×8	32					SPI/I²C×1 UART×1		48/52 LQFP

Advanced A/D Flash MCU with LCD & EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	RTC	A/D	Timer Module	Comp.	Interface	CRC	Stack	Package
HT67F2350	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	768×8	256×8	57	46×4 44×6 42×8	√	12-bit ×12	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	2	SPI/I²C×1 SPIA×1 UART×2	√	16	48/64LQFP
HT67F2360	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1536×8	256×8	71	56×4 54×6 52×8	√	12-bit ×16	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	2	SPI/I²C×1 SPIA×1 UART×2	√	16	64/80LQFP
HT67F2370	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	3072×8	512×8	71	56×4 54×6 52×8	√	12-bit ×16	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	2	SPI/I²C×1 SPIA×1 UART×3	√	16	64/80LQFP
HT67F2390	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	64K×16	4096×8	1024×8	71	56×4 54×6 52×8	√	12-bit ×16	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	2	SPI/I²C×1 SPIA×1 UART×3	√	16	64/80LQFP

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

LCD Display Flash MCU

TinyPower™ 24-Bit Delta Sigma A/D Flash MCU with LCD & EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Segment Shared I/O	Timer Module	RTC	A/D	Comp.	Inter-face	Stack	Package
HT67F5630	4.9152MHz 9.8304MHz 14.7456MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	2K×16	128×8	32×8	27	15×4	19	10-bit CTM×1 10-bit PTM×1	—	24-bit ×4	1	—	6	48LQFP
HT67F5640	4.9152MHz 9.8304MHz 14.7456MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	4K×16	256×8	64×8	41	28×4	32	10-bit CTM×1 10-bit PTM×2	√	20-bit ×8	2	SPI/I²C×1 UART×1	8	64LQFP
HT67F5650	4.9152MHz 9.8304MHz 14.7456MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	8K×16	512×8	128×8	32	40×4	18	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	√	24-bit ×8	2	SPI/I²C×1 UART×1	8	64/80 LQFP
HT67F5660	4.9152MHz 9.8304MHz 14.7456MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	16K×16	1024×8	256×8	32	48×4	26	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	√	24-bit ×8	2	SPI/I²C×1 UART×1	8	64/80 LQFP

LCD Display MCU

I/O MCU with LCD

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Input	LCD	Timer 8-bit	Timer 16-bit	RTC	PFD	Stack	Package
HT49R10A-1	2.2V~ 5.5V	400kHz~8MHz or 32kHz	1K×14	64×8	8	2	14×4 or 15×3	1	—	√	√	2	44LQFP
HT49R30A-1 HT49C30-1	2.2V~ 5.5V	400kHz~8MHz or 32kHz	2K×14	96×8	8	6	18×4 or 19×3	1	—	√	√	4	48SSOP
HT49R50A-1 HT49C50-1	2.2V~ 5.5V	400kHz~8MHz or 32kHz	4K×15	160×8	12	8	32×4 or 33×3	2	—	√	√	6	48SSOP 64/100LQFP
HT49R70A-1 HT49C70-1	2.2V~ 5.5V	400kHz~8MHz or 32kHz	8K×16	224×8	16	8	40×4 or 41×3	1	1	√	√	16	64/100LQFP

Note: 1. Part numbers including a "C" are mask version devices, "R" are OTP devices.
2. For the low voltage mask version devices, note that the HT49R30-1, HT49R50A-1 and HT49R70A-1 devices can be used as corresponding OTP devices.

A/D MCU with LCD

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Timer 8-bit	Timer 16-bit	RTC	A/D	PWM	PFD	Interface	Stack	Package
HT46R62	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	2K×14	88×8	20	19×4 or 20×3	1	—	√	9-bit×6	8-bit×3	√	—	6	52LQFP 56SSOP
HT46R64	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	4K×15	192×8	24	32×4 or 33×3	1	1	√	10-bit×8	8-bit×4	√	—	8	52/100LQFP
HT46R65	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	8K×16	384×8	24	40×4 or 41×3	—	1	√	10-bit×8	8-bit×4	√	—	16	64/100LQFP
HT46RU66	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	16K×16	576×8	32	46×4 or 47×3	1	2	√	12-bit×8	8-bit×4	√	UART×1	16	64/100LQFP
HT46RU67	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	32K×16	768×8	32	46×4 or 47×3	1	2	√	12-bit×8	8-bit×4	√	SPI×1 UART×1	16	100LQFP

Note: These devices are only available in OTP versions.

USB Interface Flash MCU

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

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	Timer Module	End-points	Built-in OSC	LDO 20mA	PWM	Interface	Stack	Package
HT68FB240	12MHz	2.2V~5.5V	32kHz~16MHz	4K×16	160×8	34	10-bit CTM×2	3	√	√	3	SPI/I²C×1	8	48LQFP

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

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	Timer Module	End-points	Built-in OSC	LDO 70mA	I/O VDD Option	Interface	Stack	Package
HT68FB540	12MHz	2.2V~5.5V	32kHz~16MHz	4K×16	256×8	17	10-bit CTM×2 10-bit STM×1 16-bit STM×1	4	√	√	√	SPI/I²C×1 SPIA×1	8	20QFN 20/24SSOP
HT68FB550	12MHz	2.2V~5.5V	32kHz~16MHz	8K×16	512×8	25	10-bit CTM×2 10-bit STM×1 16-bit STM×1	6	√	√	√	SPI/I²C×1 SPIA×1	8	24/28SSOP 48LQFP
HT68FB560	12MHz	2.2V~5.5V	32kHz~16MHz	16K×16	768×8	37	10-bit CTM×2 10-bit STM×1 16-bit STM×1	8	√	√	√	SPI/I²C×1 SPIA×1	12	24/28SSOP 48LQFP

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

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	A/D	Timer Module	16-bit MDU	End-points	Built-in OSC	LDO 70mA	I/O VDD Option	Comp.	Inter-face	Stack	Package
HT66FB540	12MHz	2.2V~ 5.5V	32kHz~ 16MHz	4K×16	512×8	—	25	√	12-bit ×8	10-bit CTM×2 10-bit STM×1 16-bit STM×1	—	4	√	√	√	2	SPI/I²C×1 SPIA×1	8	28SSOP 48LQFP
HT66FB542	12MHz	2.2V~ 5.5V	32kHz~ 16MHz	4K×16	256×8	—	17	—	12-bit ×4	10-bit CTM×2 10-bit STM×1 10-bit STM×1	—	4	√	√	√	1	SPI/I²C×1 SPIA×1	8	24SSOP
HT66FB550	12MHz	2.2V~ 5.5V	32kHz~ 16MHz	8K×16	768×8	—	37	√	12-bit ×16	10-bit CTM×2 10-bit STM×1 16-bit STM×1	—	6	√	√	√	2	SPI/I²C×1 SPIA×1	8	28SSOP 48LQFP
HT66FB560	12MHz	2.2V~ 5.5V	32kHz~ 16MHz	16K×16	1024×8	—	45	√	12-bit ×16	10-bit CTM×2 10-bit STM×1 16-bit STM×1	—	8	√	√	√	2	SPI/I²C×1 SPIA×1	12	48/64LQFP
HT66FB570	12MHz	2.2V~ 5.5V	32kHz~ 16MHz	32K×16	1024×8	256×8	55	√	12-bit ×24	10-bit PTM×5 16-bit STM×1	—	8	√	√	√	2	SPI/I²C×1 SPIA×1 UART×1	12	48/64LQFP
HT66FB582	12MHz	2.2V~ 5.5V	32kHz~ 16MHz	48K×16	1024×8	16K×8	41	√	12-bit ×16	10-bit PTM×5 16-bit STM×1	√	8	√	√	√	2	SPI/I²C×1 SPIA×1 UART×1	12	48LQFP 46QFN

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

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer Module	End-points	Built-in OSC	LDO 70mA	I/O VDD Option	Inter-face	Max RGB LED Supply	RGB LED PWM Port	Stack	Package
HT66FB572	12MHz	2.2V~ 5.5V	32kHz~ 16MHz	8K×16	1024×8	256×8	34	12-bit ×8	10-bit PTM×3 16-bit STM×1	8	√	√	√	SPI/I²C×1 SPIA×1 UART×1	40	15	12	48/64LQFP
HT66FB574	12MHz	2.2V~ 5.5V	32kHz~ 16MHz	16K×16	1024×8	256×8	38	12-bit ×12	10-bit PTM×3 16-bit STM×1	8	√	√	√	SPI/I²C×1 SPIA×1 UART×1	64	24	12	64/80LQFP
HT66FB576	12MHz	2.2V~ 5.5V	32kHz~ 16MHz	32K×16	1024×8	256×8	52	12-bit ×16	10-bit PTM×3 16-bit STM×1	8	√	√	√	SPI/I²C×1 SPIA×1 UART×1	128	48	12	80LQFP 128LQFP-EP

USB Interface MCU

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

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer 8-bit	Timer 16-bit	End-points	Built-in OSC	LDO 70mA	I/O VDD Option	Inter-face	Stack	Package
HT82B40R HT82B40A	3.3V~5.5V	6MHz or 12MHz	4K×15	160×8	34	1	1	3	√	√	√	—	8	48SSOP/LQFP
HT82B42R					15							SPI×1		16NSOP

Note: Part numbers with a single "A" suffix are mask version devices, and with a single "R" suffix are OTP devices.

I/O USB MCU with SPI (USB 2.0 Full Speed)

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer 8-bit	Timer 16-bit	End-points	Built-in OSC	LVR	PWM	I/O VDD Option	Inter-face	R-Type LCD	Stack	Package
HT82A525R	3.3V~5.5V	6MHz or 12MHz	4K×15	192×8	42	1	1	4	√	√	12-bit×3	√	SPI×2	4COM	6	24SSOP, 48LQFP

Note: The device is only available in an OTP version.

1.8V~5.5V Flash MCU

A/D Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Time Base	Timer Module	Stack	Package
HT66F302	4MHz 8MHz	1.8V~ 5.5V	4MHz, 8MHz or 32kHz	1K×14	64×8	32×8	8	12-bit×4	2	10-bit STM×1 10-bit PTM×1	2	10SOP
HT66F303							14					16NSOP

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	A/D	Timer Module	R-type LCD	Comp.	High Current LED Output	Inter-face	Stack	Package
HT66F317	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	2K×16	128×8	64×8	22	√	12-bit×8	10-bit PTM×2	4SCOM	—	22	—	8	16NSOP 20/24SOP 20/24SSOP
HT66F318	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×16	192×8	64×8	26	√	12-bit×8	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	4SCOM	1	26	I²C×1 UART×1	8	20/24/28 SOP/SSOP
HT66F319	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	64×8	26	√	12-bit×8	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	4SCOM	1	26	I²C×1 UART×1	8	16NSOP 20/24/28 SOP/SSOP
HT66F3197	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	64×8	44	√	12-bit×16	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	4SCOM	1	44	SPI/I²C×1 UART×1	8	48LQFP

TinyPower™ Flash MCU with LCD & EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Segment Shared I/O	Timer Module	RTC	A/D	IAP	Inter-face	Stack	Package
HT69F340	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×16	256×8	64×8	39	24×4 25×3	24	10-bit PTM×1 10-bit CTM×1	√	—	√	SPI/I²C×1	8	48LQFP
HT69F350	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	512×8	64×8	55	36×4 37×3	36	10-bit PTM×1 10-bit STM×1 16-bit STM×1	√	—	√	SPI/I²C×1	8	48/64LQFP
HT69F360	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1024×8	128×8	63	48×4 49×3	48	10-bit PTM×2 10-bit STM×1 16-bit STM×1	√	—	√	SPI/I²C×1 UART×1	8	64/80LQFP
HT67F370	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 20MHz or 32kHz	32K×16	2048×8	256×8	63	48×4 49×3	40	10-bit PTM×2 10-bit STM×1 16-bit STM×1	√	12-bit ×12	√	SPI/I²C×1 UART×1	8	64/80LQFP

DC Motor Flash MCU

Servo Motor Flash MCU with Driver

Part No.	Internal Clock	VCC	VDD	LDO	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	A/D	Time Base	H Bridge	Stack	Package
HT45F4830	8MHz	3.5V~ 8.4V	3V	3V	32kHz~ 8MHz	2K×16	128×8	32×8	4	10-bit PTM×1 16-bit PTM×1	12-bit×4	2	600mA Min.	4	8SOP-EP

DC Motor Flash MCU with Driver

Part No.	Internal Clock	VDD	LDO	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	HV I/O	Timer Module	A/D	Time Base	OCP	OPA	PWM	Inter-face	Stack	Package
HT45F4630	8MHz 12MHz 16MHz	3V	2.7V/3.3V/ 3.6V/3.9V/ 4.2V/5.0V	32kHz~ 16MHz	2K×16	128×8	512×8	19	3A×2	10-bit PTM×2 16-bit PTM×2	12-bit ×7	2	1	1	10-bit×2 16-bit×2	I²C×1	6	24SSOP

BLDC Motor Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Time Base	Timer Module	A/D	OCP	PWM	Comp.	OPA	Inter-face	Stack	Package
HT66FM5230	20MHz	4.5V~ 5.5V	32kHz~ 20MHz	2K×16	256×8	32×8	18	1	10-bit CTM×1 10-bit STM×1 16-bit CAPTM×1 16-bit CTM×1	10-bit ×6	1	10-bit ×3	3	—	I²C×1	6	16NSOP 20SSOP
HT66FM5240	20MHz	4.5V~ 5.5V	32kHz~ 20MHz	4K×16	256×8	64×8	26	1	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×8	1	10-bit ×3	3	—	I²C×1 UART×1	8	20SSOP 28SSOP
HT66FM5242	20MHz	4.5V~ 5.5V	32kHz~ 20MHz	4K×16	256×8	—	18	1	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×7	1	10-bit ×3	—	—	—	8	16NSOP 20SSOP
HT66FM5440	20MHz	4.5V~ 5.5V	32kHz~ 20MHz	4K×16	384×8	—	26	1	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×9	1	10-bit ×3	3	2	I²C×1 UART×1	8	28SSOP

OPA Flash MCU

TinyPower™ Flash MCU with OPA

Part No.	Internal Clock	Input Voltage	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Time Base	Timer 8-bit	Timer 16-bit	RTC	A/D	D/A	PWM	PFD	OPA/ Comp.	Inter-face	Stack	Package
HT45F23A	910kHz 2MHz	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	2K×15	128×8	64×8	22	2	1	1	√	12-bit×6	12-bit ×1	8-bit ×2	√	2	SPI/I²C ×1	6	16NSOP 20/24SSOP
HT45FH23A	4MHz 8MHz	10V~ 38V					13					12-bit×3						—		20SOP
HT45F24A	910kHz 2MHz	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	4K×16	192×8	64×8	26	2	1	1	√	12-bit×8	12-bit ×1	8-bit ×2	√	2	SPI/I²C ×1	6	20/24/28 SSOP
HT45FH24A	4MHz 8MHz	10V~ 38V					13					12-bit×3						—		20SOP

Part No.	Internal Clock	Input Voltage	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	Timer Module	A/D	D/A	Voice D/A	Comp.	OPA/ Amp.	Inter-face	Stack	Package
HT66F4530	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	2K×16	128×8	32×8	18	√	10-bit STM×1 10-bit PTM×1	12-bit ×5	8-bit ×3	—	2	2	SPI/I²C×1	6	16NSOP 20SSOP
HT66F4540	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	4K×16	256×8	64×8	26	√	10-bit STM×1 10-bit PTM×2	12-bit ×8	8-bit ×3	—	2	2	SPI/I²C×1 UART×1	8	24/28SSOP
HT66F4550	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	8K×16	384×8	64×8	26	√	10-bit STM×2 10-bit PTM×2	12-bit ×8	8-bit ×3	16-bit ×1	2	2	SPI/I²C×1 UART×1	8	24/28SSOP
HT66F4560*	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	16K×16	512×8	128×8	26	√	10-bit STM×2 10-bit PTM×2	12-bit ×8	8-bit ×3	16-bit ×1	2	2	SPI/I²C×1 UART×1	16	24/28SSOP

* Under development, available in 2Q, 2017.
Note: The MCUs internal OPA gain bandwidth are software programmable.

24-Bit Delta Sigma A/D Flash MCU

TinyPower™ 24-Bit Delta Sigma A/D Flash MCU with LCD & EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Segment Shared I/O	Timer Module	RTC	A/D	Comp.	Inter-face	Stack	Package
HT67F5630	4.9152MHz 9.8304MHz 14.7456MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	2K×16	128×8	32×8	27	15×4	19	10-bit CTM×1 10-bit PTM×1	—	24-bit ×4	1	—	6	48LQFP
HT67F5640	4.9152MHz 9.8304MHz 14.7456MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	4K×16	256×8	64×8	41	28×4	32	10-bit CTM×1 10-bit PTM×2	√	20-bit ×8	2	SPI/I²C×1 UART×1	8	64LQFP
HT67F5650	4.9152MHz 9.8304MHz 14.7456MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	8K×16	512×8	128×8	32	40×4	18	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	√	24-bit ×8	2	SPI/I²C×1 UART×1	8	64/80LQFP
HT67F5660	4.9152MHz 9.8304MHz 14.7456MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	16K×16	1024×8	256×8	32	48×4	26	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	√	24-bit ×8	2	SPI/I²C×1 UART×1	8	64/80LQFP

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Segment Shared I/O	Timer Module	A/D	Touch Key	Inter-face	Stack	Package
BH66F5233	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	2K×16	96×8	32×8	14	—	—	10-bit CTM×1	24-bit ×2	—	SPI/I²C×1	4	10SOP 16/20NSOP
BH67F5245	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×16	256×8	32×8	21	17×4	21	10-bit CTM×1	24-bit ×4	4	UART×1	6	24/28SSOP

Glucose Meter Flash MCU

Glucose Meter Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	IAP	Timer Module	RTC	LCD	A/D	Inter-face	OPA	DAC	Ref. Voltage	Temp. Sensor	Audio DAC	Stack	Package
HT45F65	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	37	√	10-bit CTM×2 16-bit STM×1	√	24×4	12-bit ×8	SPI/I²C×1 SPIA×1 UART×1	2	10-bit	√	√	16-bit	12	48/64 LQFP
HT45F66	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	512×8	59	√	10-bit CTM×2 10-bit ETM×1 16-bit STM×1	√	32×4 30×6	12-bit ×8	SPI/I²C×1 SPIA×1 UART×1	2	10-bit	√	√	16-bit	12	64/80 LQFP
HT45F67	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	512×8	59	√	10-bit CTM×2 10-bit ETM×1 16-bit STM×1	√	32×4 30×6	12-bit ×8	SPI/I²C×1 SPIA×1 UART×1	2	10-bit	√	√	16-bit	12	64/80 LQFP

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	IAP	16-bit MDU	Timer Module	RTC	LCD	A/D	Inter-face	OVP	OPA	DAC	Ref. Voltage	Stack	Package
BH66F2470	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	512×8	64×8	39	√	1	10-bit PTM×3 16-bit STM×1	√	—	12-bit ×4	SPI/I²C×1 SPIA×1 UART×2	1	1	10-bit	√	8	48LQFP
BH67F2470	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	768×8	64×8	34	√	1	10-bit PTM×3 16-bit STM×1	√	48×4 46×6 44×8	12-bit ×4	SPI/I²C×1 SPIA×1 UART×2	1	1	10-bit	√	8	64/80 LQFP

Body Fat Measurement Flash MCU

Body Fat Measurement Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	IAP	Timer Module	RTC	LCD	A/D	Inter-face	PGA	Body Fat	LDO	Stack	Package
HT45F75	4.8MHz 9.6MHz 14.4MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	4K×16	256×8	64×8	27	√	10-bit CTM×1 10-bit PTM×2	√	—	20-bit ×4	SPI/I²C×1 UART×1	1	4-electrode	√	8	48LQFP
HT45F77	4.8MHz 9.6MHz 14.4MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	8K×16	256×8	64×8	36	√	10-bit CTM×1 10-bit PTM×2	√	36×4	20-bit ×4	SPI/I²C×1 UART×1	1	4-electrode	√	8	64/80LQFP

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	IAP	16-bit MDU	Timer Module	RTC	A/D	Inter-face	PGA	Body Fat	LDO	Stack	Package
BH66F2650	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	64×8	28	√	1	10-bit PTM×3 16-bit STM×1	√	24-bit ×4	SPI/I²C×1 UART×1	1	8-electrode	√	8	48LQFP
BH66F2660	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	16K×16	1024×8	256×8	28	√	1	10-bit PTM×3 16-bit STM×1	√	24-bit ×4	SPI/I²C×1 UART×1	1	8-electrode	√	8	48LQFP

Health & Measurement MCU

Blood Pressure Meter Flash MCU

R-Type Blood Pressure Meter Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	IAP	Timer Module	RTC	LCD	A/D	Interface	PGA	Const. Current	Charge Pump + LDO	Audio DAC	Stack	Package
HT45F3W	8MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	16K×16	512×8	64×8	28	√	10-bit CTM×2 16-bit STM×1	√	24×4 22×6 20×8	13-bit ×8	SPI×2	1	2	√	16-bit	8	64LQFP

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	IAP	16-bit MDU	Timer Module	RTC	LCD	A/D	Interface	PGA	Const. Current	LDO	Stack	Package
BH66F2260	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	512×8	64×8	35	√	1	10-bit PTM×3 16-bit STM×1	√	—	12-bit ×4	SPI/I²C×1 SPIA×1 UART×1	1	2	√	8	48LQFP
BH67F2260	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	512×8	64×8	32	√	1	10-bit PTM×3 16-bit STM×1	√	32×4 30×6 28×8	12-bit ×4	SPI/I²C×1 SPIA×1 UART×1	1	2	√	8	64LQFP
BH67F2270				32K×16	1024×8		43					46×4 44×6 42×8		SPI/I²C×1 SPIA×1 UART×2					64/80 LQFP

Ultrasonic Measurement Flash MCU

Ultrasonic Distance Measurement Flash MCU

Part No.	Internal Clock	VDD	VIN	System Clock	Program Memory	Data Memory	I/O	Timer Module	A/D	OPA	SCF	AEP	Interface	Stack	Package
HT45F39	16MHz	—	8V~30V	400kHz~16MHz or 32kHz	2K×16	160×8	11	10-bit CTM×2	8-bit×8	2	1	1	BCU	4	16NSOP
HT45F391	16MHz	4.5V~5.5V	—	400kHz~16MHz or 32kHz	2K×16	160×8	11	10-bit CTM×2	8-bit×8	2	1	1	BCU	4	16NSOP

Note: The VIN should serially connect an external resistor to the MCU VDD pin.

R to F Mask MCU

R to F Mask MCU

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

Note: These devices are only available in mask versions.

Battery Charger MCU

Wireless Charger A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	A/D	OCP/DEM	OVP/OUVP	LDO	I²C	Clock Gen.	Level Shift	Clamp	Comm	Stack	Package
HT66FW2230	20MHz	4.0V~5.5V	400kHz~20MHz	4K×16	128×8	64×8	21	10-bit CTM×1 10-bit STM×1	12-bit ×8	1/1	0/0	0	1	1	0	0	0	8	28SSOP

Power Bank Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	A/D	OCP	OVP/OUVP	LDO	Level Shift	PE+	Q.C 2.0	Stack	Package
HT45F4MA	30MHz	2.55V~5.5V	470kHz~15MHz or 32kHz	2K×16	128×8	64×8	16	10-bit PTM×1 16-bit STM×1	12-bit ×8	1	1/0	—	—	—	—	4	16NSOP 20SSOP
HT45FH4MA-1							13					5V	2	—	—		20SSOP
HT45F4N	30MHz	2.55V~5.5V	470kHz~15MHz or 32kHz	4K×16	192×8	64×8	26	10-bit PTM×3 16-bit STM×1	12-bit ×14	2	0/1	—	—	—	—	8	28SSOP
HT45FH4N							21					5V	2	√	√		28SSOP

Part No.	Internal Clock	VDD	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	H.R. PWM	A/D	Auto-adjust PWM Duty	Ref. Voltage	OCP	OUVP	LDO	Level Shift	PE+	Q.C 2.0	Stack	Package
HT45F5N	8MHz	2.55V~5.5V	4K×16	256×8	64×8	30	10-bit PTM×1 16-bit STM×1	√	12-bit ×14	2	√	2	2	—	—	—	—	8	28SSOP 32QFN
HT45FH5N														5V	2	√	√		28SSOP 46QFN

Note: H.R. PWM: High Resolution and Complementary PWM Outputs with dead-time control, the duty cycle resolution is 7.8ns when the HIRC is 8MHz.

Charger Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer Module	A/D	OVP	OCP	DAC	OPA	Time Base	Battery Charger Module	QC 2.0	Stack	Package
HT45F5Q	8MHz	2.2V~5.5V	400kHz~8MHz or 32kHz	2K×14	64×8	32×8	8	—	10-bit STM×1	12-bit ×4	1	1	1	2	2	√	—	6	16NSOP
HT45F5R	8MHz	2.2V~5.5V	400kHz~8MHz or 32kHz	4K×16	128×8	64×8	20	4SCOM	10-bit STM×1 10-bit PTM×2	12-bit ×8	1	1	1	2	2	√	√	8	24/28 SSOP

Acceleration Charging Discrimination IC

Part No.	VDD	Shunt Regulator	OCP	Ref. Voltage	PE+	Q.C 2.0	Package
HT45B0010-1	2.55V~5.50V	V_{IN}: 5.5V~22V, V_{OUT}: 3.5V±3%	1	√	—	√	8SOP-EP
HT45B0011-1					√		

Touch Flash MCU

Touch I/O Flash MCU

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

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

Touch A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	8-bit Timer	A/D	Time Base	Touch Key	High Current LED Output	Inter-face	LVR	Stack	Package
BS84B06A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~16MHz	3K×16	288×8	64×8	18	1	12-bit×4	1	6	18	SPI/I^2C×1	2.55V	6	16NSOP 20DIP/SOP
BS84B08A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~16MHz	3K×16	288×8	64×8	22	1	12-bit×8	1	8	22	SPI/I^2C×1	2.55V	6	16NSOP/SSOP 20/24SOP/SSOP
BS84C12A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~16MHz	4K×16	384×8	64×8	26	1	12-bit×8	1	12	26	SPI/I^2C×1	2.55V	6	20/24/28 SOP/SSOP

Touch I/O Flash MCU with LED/LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	LCD	10-bit Timer	Time Base	Touch Key	High Current LED Output	Inter-face	LVR	Stack	Package
BS82B12A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~16MHz	2K×16	384×8	64×8	22	—	16×4	2	2	12	22	I^2C×1 UART×1	2.55V	6	20/24SOP 24QFN
BS82C16A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~16MHz	4K×16	512×8	64×8	26	√	20×4	2	2	16	26	I^2C×1 UART×1	2.55V	6	24/28SOP 32QFN
BS82D20A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~16MHz	8K×16	768×8	64×8	26	√	20×4	2	2	20	26	I^2C×1 UART×1	2.55V	8	24/28SOP 28SSOP

Touch A/D Flash MCU with LED/LCD Driver

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

Touch Flash MCU

Touch A/D Flash MCU with OPA/Comparator

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

Enhanced Touch A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	RTC	A/D	LED	Touch Key	LVR/LVD	IAP	Inter-face	Stack	Package
BS66F340	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	4K×16	512×8	128×8	26	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit×8	√	12	√	√	SPI/I^2C×1 UART×1	8	28SSOP
BS66F350	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	8K×16	768×8	128×8	40	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit×8	√	20	√	√	SPI/I^2C×1 UART×1	8	44/48 LQFP
BS66F360	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	16K×16	1024×8	128×8	46	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit×8	√	28	√	√	SPI/I^2C×1 UART×1	12	44/48 LQFP
BS66F370	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	32K×16	1536×8	128×8	60	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit×8	√	36	√	√	SPI/I^2C×1 UART×1	16	44/48/64 LQFP

Enhanced Touch A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer Module	RTC	A/D	Touch Key	IAP	LVR/LVD	Inter-face	Stack	Package
BS67F340	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	4K×16	512×8	128×8	27	24×4	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit×8	16	√		SPI/I^2C×1 UART×1	8	48LQFP
BS67F350	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	8K×16	768×8	128×8	39	32×4	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit×8	20	√		SPI/I^2C×1 UART×1	8	48/64 LQFP
BS67F360	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	16K×16	1024×8	128×8	43	40×4	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit×8	28	√		SPI/I^2C×1 UART×1	12	48/64 LQFP
BS67F370	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	32K×16	1536×8	128×8	59	48×4	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit×8	36	√		SPI/I^2C×1 UART×1	16	48/64/80 LQFP

Enhanced Touch Voice A/D Flash MCU

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

Touch Key IC

Touch Key

Part No.	Touch Key	Operating Current at 3V		Key Output Type	Package	Serial Interface	Auto Calibration
		One-key Wake-up	Any-key Wake-up				
BS801B BS801C	1-Key	1.5µA/3.0µA	—	Level-Hold or Toggle	SOT23-6	—	√
BS802B BS802C	2-Key	—	2.0µA/5.0µA	Level-Hold or Toggle	8SOP	—	√
BS804B BS804C	4-Key	1.5µA/3.0µA	3.0µA/8.0µA	—	8SOP	√	√
				Level-Hold or Toggle	16NSOP		
BS806B BS806C	6-Key	1.5µA/3.0µA	4.0µA/14.0µA	Level-Hold	16NSOP	—	√
BS808B BS808C	8-Key	1.5µA/3.0µA	5.0µA/18.0µA	—	16NSOP	√	√
				Level-Hold	20SOP/SSOP	—	

Part No.	Touch Key	VDD	Standby Current	Key Output Type	Package	Serial Interface	Auto Calibration
BS812A-1	2-Key	2.2V~5.5V	2.0µA at 3.0V Typ.	Active Low	SOT23-6	—	√
BS813A-1	3-Key	2.2V~5.5V	4.5µA at 3.0V Typ.	Active Low	8SOP	—	√
BS814A-1	4-Key	2.2V~5.5V	5.0µA at 3.0V Typ.	Active Low	10MSOP	—	√
BS814A-2	4-Key	2.2V~5.5V	5.0µA at 3.0V Typ.	—	8SOP	√	√
BS816A-1	6-Key²	2.2V~5.5V	12.0µA/6.0µA* at 3.0V Typ.	Active Low/Active High*	16NSOP	—	√
BS818A-2	8-Key	2.2V~5.5V	12.0µA/6.0µA* at 3.0V Typ.	Binary*	16NSOP	√	√
BS8112A-3	12-Key	2.2V~5.5V	13/3µA** at 3.0V Typ.	I²C	16NSOP	√	√
BS8116A-3	16-Key	2.2V~5.5V	17/3.5µA** at 3.0V Typ.	I²C	20SSOP	√	√

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

Voice Flash MCU

Enhanced Voice Flash MCU

Part No.	Internal Clock	VDD	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	RTC	A/D	IAP	LVR/LVD	DAC	Power Amp.	Inter-face	Stack	Package
HT66FV130	8MHz 12MHz 16MHz	2.2V~5.5V	2K×16	128×8	32×8	15	10-bit CTM×1 10-bit PTM×1	—	12-bit×4	√	√	16-Bit	1.5W	SPIA×1	4	20/24SOP
HT66FV140	8MHz 12MHz 16MHz	2.2V~5.5V	4K×16	256×8	64×8	19	10-bit CTM×1 10-bit PTM×2	√	12-bit×8	√	√	16-Bit	1.5W	SPI/I²C×1 SPIA×1	8	20/24/28 SOP
HT66FV150	8MHz 12MHz 16MHz	2.2V~5.5V	8K×16	512×8	128×8	27	10-bit CTM×2 10-bit PTM×2	√	12-bit×8	√	√	16-Bit	1.5W	SPI/I²C×1 SPIA×1 UART×1	8	28SOP 44LQFP
HT66FV160	8MHz 12MHz 16MHz	2.2V~5.5V	16K×16	1024×8	256×8	35	10-bit CTM×2 10-bit PTM×2 16-bit STM×1	√	12-bit×8	√	√	16-Bit	1.5W	SPI/I²C×1 SPIA×1 UART×1	8	44LQFP

Enhanced Touch Voice A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer Module	RTC	A/D	DAC	Power Amp.	Touch Key	IAP	LVR/LVD	Inter-face	Stack	Package
BS66FV340	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	4K×16	512×8	128×8	39	SCOM	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	√	12-bit ×8	√	1.5W	20	√	√	SPI/I²C×1 SPIA×1 UART×1	8	44/48 LQFP
BS66FV350	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	8K×16	768×8	128×8	39	SCOM	10-bit CTM×2 16-bit STM×1 10-bit PTM×2	√	12-bit ×8	√	1.5W	24	√	√	SPI/I²C×1 SPIA×1 UART×1	8	44/48 LQFP
BS66FV360	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	16K×16	1024×8	256×8	39	SCOM	10-bit CTM×2 16-bit STM×1 10-bit PTM×2	√	12-bit ×8	√	1.5W	28	√	√	SPI/I²C×1 SPIA×1 UART×1	12	44/48 LQFP

Wireless Voice Flash MCU

Wireless Voice Flash MCU

Part No.	VDD	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	RTC	LVR/LVD	A/D	G.711 Voice Codec	IAP	16-bit PCM ADC	DAC	Power Amp.	Inter-face	Stack	Package
HT66FV240	2.2V~5.5V	4K×16	384×8	128×8	28	16-bit CTM×1 16-bit STM×1 16-bit PTM×1	√	√	12-bit ×8	√	√	√	16-Bit	1.5W	SPI/I²C×1	8	48LQFP

Voice & Music MCU

Enhanced Voice MCU

Part No.	VDD	Program Memory	Data Memory	Voice ROM	Voice Capacity	I/O	Timer 8-bit	Timer 16-bit	Audio Output DAC	Audio Output PWM	Stack	Package
HT86BR10	2.2V~5.5V	8K×16	192×8	192K×8	72sec	16	3	—	12-bit×1	√	8	24SSOP(209mil) 28SOP, 44LQFP
HT86B10	2.2V~5.5V	8K×16	192×8	192K×8	72sec	16	3	—	12-bit×1	√	8	24SSOP(150/209mil) 28SOP, 44LQFP
HT86BR30	2.2V~5.5V	8K×16	192×8	384K×8	144sec	16	3	—	12-bit×1	√	8	28SOP, 44LQFP
HT86B30	2.2V~5.5V	8K×16	192×8	384K×8	144sec	16	3	—	12-bit×1	√	8	28SOP, 44LQFP
HT86BR60	2.2V~5.5V	8K×16	384×8	1024K×8	384sec	20	3	1	12-bit×1	√	8	28SOP
HT86B60	2.2V~5.5V	8K×16	384×8	1024K×8	384sec	20	3	1	12-bit×1	√	8	28SOP, 44LQFP
HT86B70	2.2V~5.5V	8K×16	384×8	1536K×8	576sec	24	3	1	12-bit×1	√	8	44LQFP
HT86B80	2.2V~5.5V	8K×16	384×8	2048K×8	768sec	24	3	1	12-bit×1	√	8	44LQFP

Note: 1. Part numbers including an "R" are OTP devices, all others are mask version devices.
2. Evaluation kits are available for product development and verification purposes, please contact Holtek for further information.
3. The quoted Voice Capacity is based on a 21Kbps data rate.

Enhanced Music MCU (8 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer 8-bit	Timer 16-bit	D/A	A/D	Speech	Power AMP	Package
HT37A30	2.4V~5.5V	64K×16	320×8	20	2	1	16-bit×2	—	PCM/ADPCM	√	28SOP, 48SSOP
HT37A40	3.3V~5.5V	96K×16	320×8	28	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 64QFP, 80LQFP
HT37A50	3.3V~5.5V	128K×16	320×8	28	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 64QFP, 80LQFP
HT37A70	3.6V~5.5V	256K×16	320×8	28	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 64QFP, 80LQFP

Note: 1. These devices are only available in mask versions.
2. The waveform data and program code share the same memory space.

Enhanced Music MCU (16 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer 8-bit	Timer 16-bit	D/A	A/D	Speech	Power AMP	Package
HT37B90	3.0V~5.5V	512K×16	1280×8	40	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	100LQFP

Note: 1. These devices are only available in mask versions.
2. The waveform data and program code share the same memory space.

Part No.	VDD	Program Memory	Data Memory	I/O	Timer 8-bit	Timer 16-bit	D/A	A/D	Speech	Power AMP	Package
HT37P00	2.4V~5.5V	—	4096×8	56	3	1	16-bit×2	12-bit×16	PCM/ADPCM	√	128QFP

Note: The waveform data and program code share the same memory space.

Bank & Commercial MCU

e-Banking OTP MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Timer	Oscillator	RTC	A/D	Time Base	Stack	Package
HT82R732	4MHz	2.2V~5.5V	4MHz	4K×16	576×8	18	24×4	8-bit×2	HIRC/LXT	√	—	√	6	28SSOP 48LQFP
HT45R4U	4MHz	2.2V~3.6V	400kHz~4MHz or 32kHz	16K×16	1152×8	34	32×4	8-bit×3	HXT/HIRC/LXT	√	12-bit×8	√	8	64LQFP

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Segment Share Output	Timer 8-bit	Timer 16-bit	RTC	A/D	PWM	PFD	Inter-face	Stack	Package
HT56R668	2.2V~5.5V	400kHz~12MHz or 32kHz	16K×16	2304×8	24	64×16 or 72×8	24	3	1	√	12-bit×8	12-bit×4	√	SPI/I²C×1	12	100LQFP 128QFP
HT56R678	2.2V~5.5V	400kHz~12MHz or 32kHz	32K×16	2304×8	24	64×16 or 72×8	24	3	1	√	12-bit×8	12-bit×4	√	SPI/I²C×1	12	100LQFP 128QFP
HT56R688	2.2V~5.5V	400kHz~12MHz or 32kHz	48K×16	2304×8	24	64×16 or 72×8	24	3	1	√	12-bit×8	12-bit×4	√	SPI/I²C×1	12	100LQFP 128QFP

Smart Card Reader OTP MCU with USB

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	SEG. Shared Output	Timer 8-bit	Timer 16-bit	RTC	A/D	PWM	USB	LDO	EMV ISO 7816-3	Audio DAC	Inter-face	Stack	Package
HT56RB27	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~12MHz or 32kHz	48K×16	3840×8	24	—	—	3	1	√	12-bit×8	12-bit×4	√	1.8V 3.0V 5.0V	Class A/B/C	√	SPI/I²C ×2	12	40QFN 44LQFP
HT56RB688	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~12MHz or 32kHz	48K×16	3840×8	24	80×16 or 88×8	24	3	1	√	12-bit×8	12-bit×4	√	1.8V 3.0V 5.0V	Class A/B/C	√	SPI/I²C ×2	12	144LQFP

Smart Card Reader OTP MCU with UART

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	Timer 8-bit	Timer 16-bit	RTC	A/D	PWM	LDO	EMV ISO 7816-3	Audio DAC	Inter-face	Stack	Package
HT56RU25	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~12MHz or 32kHz	16K×16	1280×8	24	3	1	√	12-bit×8	12-bit×4	1.8V 3.0V 5.0V	Class A/B/C	√	UART×1 SPI/I²C×2	12	28SSOP 44LQFP

Smart Card Reader Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	RTC	Time Base	Timer Module	Comp.	USB	LDO	EMV ISO 7816-3	IAP/ ISP	Inter-face	Stack	Package
HT66F4360	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	3072×8	—	36	12-bit×8	√	2	10-bit CTM×2 10-bit PTM×1 16-bit STM×1	2	√	1.8V 3.0V 5.0V	Class A/B/C		UART×2 SPI×2 I²C×1	12	48/64 LQFP
HT66F4370	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	3072×8	—	36	12-bit×8	√	2	10-bit CTM×2 10-bit PTM×1 16-bit STM×1	2	√	1.8V 3.0V 5.0V	Class A/B/C		UART×2 SPI×2 I²C×1	12	48/64 LQFP
HT66F4390	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	64K×16	3072×8	256×8	36	12-bit×8	√	2	10-bit CTM×2 10-bit PTM×1 16-bit STM×1	2	√	1.8V 3.0V 5.0V	Class A/B/C		UART×2 SPI×2 I²C×1	16	48/64 LQFP

Special Purpose

Emergency Light Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	A/D	OCP	Time Base	LDO	HV	HV NMOS Driver	HV LED Driver	HV Buzzer Driver	Step Up/Down	Stack	Package
HT45FH4J	12MHz 16MHz 20MHz	5V	32kHz~ 20MHz	2K×16	128×8	64×8	12	10-bit PTM×3	12-bit ×6	2	2	5V	12V	√	1	1	√	4	16NSOP 20SSOP

Shock Detector Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	D/A	Comp.	Time Base	PGA	Stack	Package
HT45F56	8MHz	4.5V~ 5.5V	8MHz or 32kHz	1K×14	32×8	32×8	6	10-bit CTM×1	6-bit	1	2	1~1000	2	OCDS 16NSOP

Ultrasonic Atomizer Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer Module	Atomizer Processor	Interface	Stack	Package
HT45F3820	12MHz	2.2V~ 5.5V	12MHz or 32kHz	1K×16	64×8	32×8	8	—	10-bit PTM×1 10-bit STM×1	√	—	4	8/10SOP
HT45F3830	12MHz	2.2V~ 5.5V	2MHz or 32kHz	2K×16	128×8	64×8	22	4SCOM	10-bit CTM×1 10-bit PTM×2 10-bit STM×1	√	I²C×1	4	16/20NSOP 24SOP

Personal Care Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer Module	Time Base	A/D	DC/DC	Start up Voltage	H.R. PWM	OCP	OVP	Stack	Package
HT45F3420	8MHz	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	1K×14	64×8	32×8	8	—	10-bit STM×1	2	12-bit ×4	—	—	√	√	√	4	10MSOP
HT45F3430	8MHz	2.2V~ 5.5V	400kHz~ 8MHz or 32KHz	2K×15	128×8	64×8	22	4SCOM	10-bit STM×1	2	12-bit ×8	—	—	√	√	√	4	16NSOP 24SSOP
HT45F3520	8MHz	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	1K×14	64×8	32×8	13	—	10-bit STM×1 10-bit PTM×1	2	12-bit ×4	√	0.9V	—	—	—	4	16NSOP
HT45F3530	8MHz	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	2K×15	128×8	64×8	21	4SCOM	10-bit STM×1 10-bit PTM×1	2	12-bit ×8	√	0.9V	—	—	—	4	24SSOP

Note: H.R. PWM: High Resolution and Complementary PWM Outputs with dead-time control, the duty cycle resolution is 7.8ns when the HIRC is 8MHz.

Power Tool Controller Flash MCU

Part No.	Internal Clock	VCC	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	A/D	OCP	Inter-face	Time Base	Level Shift	Stack	Package
HT45F3630	8MHz	12V	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	2K×16	64×8	32×8	12	10-bit PTM×2	12-bit×8	1	I²C×1	2	1	6	16SSOP

RGB LED Controller Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	Timer Module	Interface	Stack	Package
HT45F0060	8MHz	2.2V~5.5V	8MHz	1K×14	64×8	8	10-bit CTM×3	Cascading Transceiver×1	2	10SOP

Waveform Generator Flash MCU

Part No.	Input Voltage	VDD	System Clock	Program Memory	Data Memory	I/O	Waveform Output	Timer Module	Time Base	Stack	Package
HT45F2020	8V~16V	5.0V	8MHz or 32kHz	1K×14	32×8	4	2	10-bit PTM×1	1	2	OCDS 16NSOP
HT45F2022	—	2.2V~5.5V	8MHz or 32kHz	1K×14	32×8	4	2	10-bit PTM×1	1	2	OCDS 16NSOP

Electronic Warm Lighting Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	Time Base	DC/DC	Start up Voltage	Comp.	Stack	Package
HT45F0039	8MHz	3.0V~ 3.8V	8MHz or 32kHz	1K×16	64×8	32×8	12	10-bit CTM×1 10-bit PTM×1	2	√	0.9V	1	4	16NSOP

I/O Flash RF Transparent Transmission Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Time Base	Timer Module	LVR/LVD	Interface	Stack	Package
BC68F0031	8MHz	1.8V~ 5.5V	8MHz or 32kHz	2K×16	128×8	32×8	14	2	10-bit CTM×1 16-bit STM×1	√	SPI×1, I²C/UART×1	6	16NSOP

Note: It is suggested that UART be used between 2.2V~5.5V of V_{DD} without external crystal.

Special Purpose

PIR Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	8-bit Timer	Timer Module	Temp. Sensor	A/D	OPA	Interface	Stack	Package
HT45F0026	2.2V~ 5.5V	1/2/4/8MHz or 32kHz	1K×16	128×8	32×8	4	—	10-bit STM×1	—	12-bit×4	2	—	4	8SOP 10MSOP
HT45F0027	2.2V~ 5.5V	1/2/4/8MHz or 32kHz	2K×16	256×8	32×8	9	2	—	√	12-bit×6	2	SPI/I²C×1	6	16NSOP/QFN

PIR Controller IC

Part No.	VDD	Operating Current	Standby Current	ZC Off/On for Override	Flash on Mode Auto-change	Comparator Window	Effective Trigger Width	CDS Debounce Time	Triac Drive	Relay Drive	LED	Buzzer	LVD	Package
HT7610A	5V~12V	100µA	—	2 times	Flash	1/16 (V_{DD}-V_{EE})	>24ms	5s	—	√	—	—	—	16DIP
HT7610B									√					
HT7611A	5V~12V	100µA	—	1 time	No flash	1/16 (V_{DD}-V_{EE})	>24ms	5s	—	√	—	—	—	16DIP
HT7611B									√					
HT7612	2.7V~5.5V	—	17µA	2 times	Flash	Vref×(1/2±1/6)	>24ms	15~20s	√	√	√	√	√	16DIP
HT7612B			19µA					< 3s						16NSOP

Note: Operating and standby current values are typical values.

Infrared

IR Remote OTP MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	I/O Segment Share	8-bit Timer	RTC	IR Carrier	LVR	Stack	Package
HT48RA0-6	4095kHz	1.8V~3.6V	400kHz~4095kHz	1K×14	32×8	16	—	—	—	—	√	√	1	16NSOP 20SSOP
HT49RA0-6	4095kHz	2.0V~3.6V	400kHz~4095kHz	2K×16	96×8	16	21×2 21×3 20×4	7	1	√	√	√	4	48LQFP

Note: Part numbers with a "-6" suffix represent a ±1% internal oscillator tolerance.

IR Remote Controller

Part No.	VDD	Addr. No.	Data No.	Key No.	Signal Gap Time	38kHz Carrier	Package
HT62104	2.0V~5.0V	2	7	8	4T	√	16DIP/NSOP
HT6220A	2.0V~3.6V	16	8	6	—	√	8SOP
				30			16NSOP
HT6221A	2.0V~3.6V	16	8	32	—	√	20SOP
HT6221B				48			
HT6222A	2.0V~3.6V	16	8	64	—	√	24SOP, Chip, Wafer

Wireless Flash MCU

I/O Flash RF Transparent Transmission Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Time Base	Timer Module	LVR/LVD	Interface	Stack	Package
BC68F0031	8MHz	1.8V~5.5V	8MHz or 32kHz	2K×16	128×8	32×8	14	2	10-bit CTM×1 16-bit STM×1	√	SPI×1 I²C/UART×1	6	16NSOP

Note: It is suggested that UART be used between 2.2V~5.5V of V_DD without external crystal.

Sub-1GHz RF Transmitter

Sub-1GHz RF Transmitter Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	IAP	I/O	Timer Module	Time Base	LVR/LVD	Band	OOK/FSK	Data Rate	Output Power	Stacks	Package
BC68F2123	2.2V~3.6V	8MHz	1K×14	64×8	32×8	—	9	10-bit STM×1 10-bit PTM×1	2	√	315/433/868/915MHz	√	0.5~25Kbps (OOK)	0/5/10/13dBm	2	16NSOP-EP
BC68F2130	2.0V~3.6V	16MHz	2K×16	256×8	—	√	8	10-bit CTM×1 10-bit PTM×1	2	√	315/433/868/915MHz	√	0.5~25Kbps (OOK)	0/10/13dBm	8	16NSOP-EP
BC68F2140	2.0V~3.6V	16MHz	4K×16	256×8	—	√	14	10-bit CTM×1 10-bit PTM×1	2	√	315/433/868/915MHz	√	0.5~25Kbps (OOK)	0/10/13dBm	8	24SSOP-EP

Sub-1GHz RF Transmitter OTP MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer Module	LVR/LVD	Band	OOK	Data Rate	Output Power	Stacks	Package
BC48R2020	2.3V~3.6V	8MHz	1K×14	64×8	8	8-bit Timer×1	√	315/433MHz	√	10kbps	10dBm	2	16NSOP

Sub-1GHz RF Transmitter

Part No.	VDD	Band	OOK/FSK	Symbol Rate	Output Power	Package
BC2102	2.2V~3.6V	315/433/868/915MHz	√	0.5~25Kbps	0/5/10/13dBm	8SOP-EP

Sub-1GHz RF Transmitter SoC

Part No.	VDD	Addr. No.	Data No.	Compound Data No.	Trig.	Band	OOK	Output Power	Package
HT6P237A	2.0V~3.6V	22	2	2	Data Low	315/433MHz	√	12/14/16dBm	16NSOP
HT6P247A		24	2						
HT6P427A		20	4		Data High				
HT6P437A		24							

Note: 1. The HT6P2x7A transmission code format is different from the HT6P4x7A device.
　　　2. The HT6P237A transmission code format is compatible with HT6P20B and thus the receiving application circuit does not need to be changed.
　　　3. The HT6P427A transmission code format is compatible with xx2240/xx1527 and thus the receiving application circuit does not need to be changed.

Sub-1GHz RF Receiver

Sub-1GHz RF Receiver Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	Time Base	Band	Demod.	Data Rate	Sensitivity	Stack	Package
BC68F2420	4.0V~5.5V	16MHz	1K×14	64×8	32×8	13	10-bit CTM×1 10-bit STM×1	2	315/433MHz	OOK	10Kbps	-100dBm	4	16NSOP-EP

Sub-1GHz RF Receiver

Part No.	VDD	Band	OOK	Max. Data Rate	Sensitivity	Package
BC2401	4.5V~5.5V	315/433MHz	√	5kbps	-97dBm	8SOP-EP

2.4GHz RF Transceiver

2.4GHz RF Transceiver Flash MCU

Part No.	VDD	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	RTC	LVR/LVD	A/D	Built-in 2.4GHz RF Block	Comp.	Interface	Stack	Package
BC66F840	2.2V~3.6V	4K×16	256×8	128×8	21	16-bit CTM×1 16-bit STM×1 16-bit ETM×1	√	√	12-bit×8	√	1	SPI/I²C×1	8	32QFN
BC66F850	2.2V~3.6V	8K×16	384×8	256×8	29	16-bit CTM×2 16-bit STM×1 16-bit ETM×1	√	√	12-bit×16	√	1	SPI/I²C×1	8	40QFN

2.4GHz RF Transceiver

Part No.	VDD	Mod.	Data Rate	Output Power	Sensitivity	Interface	Package
BC9824	1.9V~3.6V	GFSK	250K~2Mbps	-40 ~ +3dBm	-96dBm @ 250Kbps	SPI	20QFN

Bluetooth Low Energy (BLE)

BLE Transparent Transmission Flash MCU

Part No.	VDD	Max. Frequency	Program Memory	Data EEPROM	Timer	I/O	Interface	Data Rate	Output Power	Sensitivity	Package
BC32F7611	2.2V~3.6V	40MHz	64K×8	8K×8	8	22	USART×1 UART×2 SPI×1, I²C×2	1Mbps	+5dBm	-90dBm	46QFN

BLE Transparent Transmission

Part No.	VDD	Data EEPROM	Data Rate	Output Power	Sensitivity	Interface	Stamp Holes	Package
BC7601	2.2V~3.6V	—	1Mbps	+5dBm	-90dBm	UART/SPI	—	32QFN
BC7602		8K×8		+5dBm			—	46QFN
BCM-7602-G01				+3dBm			8×2 (P=1.27mm)	—

FRS MCU

Two Way Radio Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit	16-bit	RTC	A/D	D/A	CTCSS/DCS	Pre-emphasis/De-emphasis	Scramble	Compandor	Stack	Package
HT98F069	3.3V~5.5V	32kHz~16MHz	24K×16	1152×8	42	2	1	√	12-bit×8	8-bit×4	√	√	√	√	10	48/64LQFP

Near Field Communication (NFC)

A/D Flash NFC MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	RTC	A/D	R-type LCD	Comp.	High Current LED Output	Interface	Stack	Package
HT45F4050	4MHz 8MHz 12MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	8K×16	256×8	64×8	41	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	√	12-bit ×13	4SCOM	1	41	SPI/I²C×1 UART×1 NFC×1	8	48LQFP

NFC PICC Controller

Part No.	VDD	NFC Data EEPROM	NFC Standars	To Tag Modulation	Data Rate	Data Integrity	UID	UID ASCII Mirror	NFC Counter Mirror	UID and NFC Counter Mirror	Interface	Package
HT45B4022	1.8V~5.5V	256×8	NFC Forum Type 2 and ISO14443A	100% ASK	106 Kbit/s	16-bit CRC	7 Bytes	√	√	√	SPI/I²C×1 NFC×1	10DFN

Encoder/Decoder

2^{12} Encoder/Decoder

Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Data No.	Data Type	Trig.	Check Times	Package	Pair
HT12E	Encoder	2.4V~12V	8	4	0	—	$\overline{TE}$	—	18DIP, 20SOP	HT12D/12F
HT12D	Decoder	2.4V~12V	8	0	4	Latch	—	3	18DIP, 20SOP	HT12E
HT12F	Decoder	2.4V~12V	12	0	0	—	—	3	18DIP, 20SOP	HT12E

3^9 Encoder

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

Learning Encoder

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

2-wire Communication Flash MCU

2-wire Communication Flash MCU

Part No.	Internal Clock	Input Voltage	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer Module	A/D	Time Base	RTC	LDO	Constant Current Modulator	Data Interface	Stack	Package
HT45F2002	8MHz 12MHz 16MHz	7~42V	32kHz~16MHz	2K×15	96×8	32×8	11	10-bit PTM×4 10-bit CTM×2	12-bit ×5	2	√	5.0V	√	√	6	20SSOP

Earphone Interface Bridge

Earphone Interface Bridge Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Earphone Interface Communication	Interface	GPIO	Mic Signal Frequency	Mic Signal Waveform	Package
BH45F0031	4MHz 8MHz 12MHz	2.2V~5.5V	32kHz~12MHz	1K×16	128×8	√	I²C, SPI, UART (by software)	6	500Hz~100kHz	Analogous Sinewave	8SOP

Interface Bridge

Bridge

Part No.	Description	VDD	Clock Input	Internal clock	End-points	Interface	USB	Virtual COM	HID	FIFO/Buffer	Interface Data Rate	I/O VDD	Package
HT45B0F	SPI to UART Bridge	2.0V~5.5V	400kHz~20MHz	—	—	SPI×1 UART×1	—	—	—	TX: 1 byte RX: 4 byte	Up to 115.2kbps Baud	—	16NSOP
HT45B0K	SPI to USB Bridge	3.3V~5.5V	6MHz or 12MHz	—	6	SPI×1 USB×1	Full Speed	—	—	160 byte	12MHz	—	16NSOP
HT42B532-1	USB to I²C Bridge	3.3V~5.5V	—	12MHz	—	USB×1 I²C×1	Full Speed	√	—	TX: 62 bytes RX: 62 bytes	Up to 400kHz	√	8SOP 10MSOP
HT42B533-1	USB to SPI Bridge	3.3V~5.5V	—	12MHz	—	USB×1 SPI×1	Full Speed	√	—	TX: 128 bytes RX: 128 bytes	Up to 8MHz	√	10MSOP 16NSOP
HT42B534-1	USB to UART Bridge	3.3V~5.5V	—	12MHz	—	USB×1 UART×1	Full Speed	√	—	TX: 128 bytes RX: 128 bytes	Up to 3Mbps Baud	√	8/10SOP 10MSOP 16NSOP
HT42B564-1	USB (HID) to UART Bridge	3.3V~5.5V	—	12MHz	—	USB×1 UART×1	Full Speed	—	√	TX: 32 bytes RX: 32 bytes	Up to 115.2kbps Baud	√	10SOP

CAN Controller

Part No.	Description	VDD	Internal Clock	CAN	CAN IP	Time Triggered Comunication	CAN Operating Mode	Interface	CAN FD Frame Format	Message Objects	Package
HT45B3305	CAN Controller	2.2V~5.5V	8MHz~24MHz	1	BOSCH C_CAN FD8	√	FULL CAN/FIFOs/Enhanced Full CAN with FIFO	I²C×1 SPI×1	BOSCH CAN FD V1.0/ISO11898-1	32	16NSOP 16SSOP 16QFN

Note: Operating temperature range ~40°C ~ +125°C.

Telecom Peripheral

Telecom Peripheral

Part No.	Description	VDD	OSC Frequency	Package
HT9200A	DTMF generator	2.5V~5.5V	3.58MHz	8DIP/SOP
HT9200B				14SOP
HT9170B	DTMF receiver	2.5V~5.5V	3.58MHz	18DIP
HT9170D				18SOP
HT9172	DTMF receiver	2.5V~5.5V	3.58MHz	18DIP/SOP

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

LDO & Detector

TinyPower™ LDO

Part No.	Maximum Input Voltage	Output Voltage, V_{OUT}	Max. Output Current (mA)	Typical Current Consumption (µA)	Chip Enable Function	Tolerance	Protections	Package
HT1015-1	12V	1.5V	18	2.2	—	±3%	—	TO92, SOT23-5 SOT89
HT71xx-1	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.4V/5.0V	30	2.5	—	±3%	Soft-Start	TO92, SOT23-5 SOT89
HT71xx-2	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.4V/5.0V	30	2.5	—	±1%	Soft-Start	TO92, SOT23-5 SOT89
HT71xx-3	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.4V/5.0V	30	1.0	—	±2%	Soft-Start	TO92, SOT23-5 SOT89
HT75xx-1	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100	2.5	—	±3%	Soft-Start	TO92, SOT23-5 SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150					
HT75xx-2	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100	2.5	—	±1%	Soft-Start	TO92, SOT23-5 SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150					
HT75xx-3	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100	1.0	—	±2%	Soft-Start	TO92, SOT23-5 SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150					
HT75xx-7	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100	2.5	√	±2%	Soft-Start, OCP, OTP	TO92, SOT23-5 SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150					
HT73xx	12V	1.8V	150	3.5	—	±3%	—	TO92, SOT89
		2.5V	180					
		2.7V	200					
		3.0V/3.3V/3.5V/4.15V/5.0V	250					
HT73xx-1	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250	2.5	—	±3%	Soft-Start	TO92, SOT89 8SOP-EP
HT73xx-2	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250	2.5	—	±1%	Soft-Start	TO92, SOT89 8SOP-EP
HT73xx-3	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250	1.0	—	±2%	Soft-Start	TO92, 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	250	2.5	√	±2%	Soft-Start, OCP, OTP	TO92, SOT89 8SOP-EP
HT72xx	8V	1.8V/2.5V/2.7V/3.0V/3.3V/4.5V/5.0V	300	4	√	±2%	OCP, OTP	SOT23, SOT23-5 SOT89
HT78xx	8V	1.8V/2.5V/2.7V/3.0V/3.3V/5.0V	500	4	√	±2%	OCP, OTP	SOT23-5, SOT89
HT71Hxx	40V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	50	2.5	√	±2%	Soft-Start, OCP, OTP, Reverse Battery	SOT89-3, SOT23-5 TO-252-3, 8SOP-EP
HT75Hxx	40V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	150	2.5	√	±2%	Soft-Start, OCP, OTP, Reverse Battery	SOT89-3, SOT23-5 TO-252-3, 8SOP-EP
HT73Hxx	40V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250	2.5	√	±2%	Soft-Start, OCP, OTP, Reverse Battery	SOT89-3, SOT23-5 TO-252-3, 8SOP-EP

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

2-wire High Voltage Transceiver

Part No.	Maximum Input Voltage	LDO	Low Voltage Detector	LDO Output Current(mA)	Typical Current Consumption (µA)	Constant Current Modulator	Data Interface	Package
HT45B0003	42V	3.3V	5.25V	30mA (input voltage 7V) 60mA (input voltage 10V)	20	√	√	8SOP
HT45B0005		5.0V						

TinyPower™ Voltage Detector

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

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

DC to DC Converter

Asynchronous Step-Down DC to DC Converter

Part No.	Max.Input Voltage	Output Voltage	Output Current (A)	Switching Frequency (kHz)	Current Limit (A)	Accuracy	Shutdown Current, I_{OFF} (µA)	Operation Current, I_Q (mA)	Efficiency	Mode	Package
HT7463A	52V	1.00V~36V	0.6	1250	1.0	0.800V±2.0%	1.0	0.7	95%	PWM	SOT23-6
HT7463B				550							
HT7465	24V	0.92V~20V	2.0	380	3.4	0.920V±3.0%	20	1.0	90%	PWM	8SOP-EP
HT7466	24V	1.23V~20V	3.0	380	4.3	1.222V±2.0%	20	1.1	90%	PWM	8SOP-EP

Asynchronous Step-Up DC to DC Converter

Part No.	Input Voltage	Output Voltage, V_{OUT}	Output Current (A)	Switching Frequency (kHz)	Current Limit (A)	Accuracy	Shutdown Current, I_{OFF} (µA)	Operation Current, I_Q (µA)	Efficiency	Mode	Package
HT77xx	0.7V~6.0V	1.8V/2.2V	0.1	115	—	V_{OUT}±2.5%	1.0	4	80%	PFM	TO92, SOT23 SOT23-5, SOT89
		2.7V/3.0V/3.3V/3.7V/5.0V							85%		
HT77xxA	0.7V~6.0V	2.7V/3.0V/3.3V/3.7V/5.0V	0.2	200	0.8	V_{OUT}±2.5%	1.0	5	85%	PFM	TO92, SOT23 SOT23-5, SOT89
HT77xxB	0.7V~6.0V	1.8V/2.2V	0.1	115	—	V_{OUT}±2.5%	1.0	4	80%	PFM	TO92, SOT23 SOT23-5, SOT89
		2.7V/3.0V/3.3V/3.7V/5.0V							85%		
HT77xxBA	0.7V~6.0V	2.7V/3.0V/3.3V/3.7V/5.0V	0.2	200	0.8	V_{OUT}±2.5%	1.0	5	85%	PFM	TO92, SOT23 SOT23-5, SOT89
HT77xxC	0.7V~6.0V	1.8V/2.2V	— (External)	115	—	V_{OUT}±2.5%	1.0	4	80%	PFM	SOT23-5, SOT89
		2.7V/3.0V/3.3V/3.7V/5.0V							85%		
HT7991	2.6V~5.5V	3.0V~12.0V	1.0	1000	2.5	0.6V±2.0%	1.0	210	85%	PWM	SOT23-6

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

Synchronous Step-Up DC to DC Converter

Part No.	Input Voltage	Output Voltage, V_{OUT}	Output Current (A)	Switching Frequency (kHz)	Current Limit (A)	Accuracy	Shutdown Current, I_{OFF} (µA)	Operation Current, I_Q (µA)	Efficiency	Mode	Package
HT77xxS	0.7V~6.0V	1.8V/2.2V	0.1	500	—	V_{OUT}±2.5%	1.0	4	80%	PFM	TO92, SOT23, SOT23-5, SOT89
		2.7V/3.0V/3.3V/3.7V/5.0V							85%		
HT77xxSA	0.7V~6.0V	2.7V/3.0V/3.3V/3.7V/5.0V	0.2	500	0.8	V_{OUT}±2.5%	1.0	4	90%	PFM	TO92, SOT23, SOT23-5, SOT89
HT7992*	2.4V~5.5V	2.5V~5.5V	2.0	500	5.0	0.6V±1.5%	1.0	70	90%	PWM	10QFN
HT7993*	2.4V~5.5V	2.5V~5.5V	3.0	500	6.0	0.6V±1.5%	1.0	70	90%	PWM	10QFN

* Under development, available in 1Q, 2017.
Note: The xx in the part number is the output voltage.

Charge Pump DC to DC Converter

Part No.	Input Voltage	Output Voltage, V_{OUT}	Output Current (mA)	Switching Frequency (kHz)	Current Limit (A)	Accuracy	Shutdown Current, I_{OFF} (µA)	Operation Current, I_Q (mA)	Efficiency	Package
HT7660	3V~12V	$-V_{DD} \sim V_{DD}$	20	10	—	V_{OUT}±4.0%	—	0.08	98%	8DIP/SOP

AC to DC Converter

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

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

White LED Backlight Driver

Part No.	Input Voltage	Output Current (mA)	Switching Frequency (kHz)	Efficiency	Typical OVP (V)	Accuracy	Max. LED#	PWM Dimming Frequency	Power Element	Backlight Type	Protections	Package
HT7937	2.5V~5.5V	120	1200	85%	28	95mV±10%	6	100Hz~1kHz	Internal	Series	OVP	SOT23-6
HT7938	2.6V~5.5V	200	1200	85%	39	200mV±5%	10	100Hz~1kHz	Internal	Parallel / Series	UVLO, OVP, OCP, OTP	SOT23-6
HT7938A				90%		300mV±5%		100Hz~200kHz				
HT7939	2.6V~5.5V	260	1200	90%	32	200mV±5%	39	100Hz~1kHz	Internal	Parallel / Series	UVLO, OVP, OCP, OTP	SOT23-6
HT7939A-1					17.6			100Hz~200kHz				
HT7939A-2					32							
HT7963	9.0V~30V	1200	200	90%	Adjustable	300mV±3%	—	100Hz~1kHz	External	Parallel / Series	UVLO, OVP, OCP, OTP, Soft-Start, LED open, LED short, OSP	8SOP

LED Lighting Driver

AC/DC LED Lighting

Part No.	Topology	PF	Dimming	Power MOS	LDO Output	HV Start-up	Maximum Output Power	Current Accuracy	Protections	Package
HT7L4091	Buck	>0.9	Linear, PWM	Ext.	5V/6mA	—	60W	±3%	UVLO, OVP, OTP, OCP, LED short	8SOP
HT7L4661	Buck	>0.9	Linear	Ext.	5V/5mA	650V	60W	±2%	UVLO, OVP, OTP, OCP, LED open/short	10MSOP
HT7L4811	Buck	>0.9	—	Ext.	—	—	60W	±2%	UVLO, OVP, OTP, OCP, LED open/short	SOT23-6
HT7L4813				500V			12W/17W*			8SOP
HT7L4815				500V			19W/21W*			8SOP
HT7L5600	Flyback (PSR)	>0.9	—	Ext.	—	—	60W	±3%	UVLO, OVP, OTP, OCP, LED open/short	SOT23-6
HT7L5610				650V			13W/21W*			8DIP
HT7L5820	Flyback (PFC+QR PWM)	>0.97	—	Ext.	—	650V	200W	±2%	Brown In/Out, UVLO, OCP, open/short, OVP (Auto Recovery), OTP (Auto Recovery)	16NSOP
HT7L5821									Brown In/Out, UVLO, OCP, open/short, OVP (Latched), OTP (Latched)	

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

Bluetooth Low Energy (BLE) Module

BLE Transparent Transmission

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

PIR Module

Passive Infra Red Miniaturized Module

Part No.	VDD	Detection Range (Typ.) Meter	FOV H, V	Lens Color	Interface	Power Consumption
HT7M2126		3.5~6	121°, 77°	Nature		
HT7M2127		2.8~5	121°, 77°	Black		
HT7M2136	2.7V~5.5V	5.5~8	91°, 10°	Nature	I²C or I/O	< 50µA
HT7M2156		8~12	10°, 20°	Nature		
HT7M2176		5~7.5	86°, 75°	Nature		

Temperature Humidity Module

Temperature Humidity Sensor Module

Part No.	VDD	Temperature Range	Temperature Accuracy	Humidity Range	Humidity Accuracy	Interface	Standby Current
HT6M6122	2.7V~5.5V	-20°C~60°C	±0.5°C at 25°C	20%~95%	±5% at 60%RH	I²C or 1-Wire	5µA

LCD Controller & Driver

RAM Mapping LCD Controller & Driver

Part No.	VDD	Max. Resolution Segment × Common	LCD Voltage	Bias	Gray Scale	Serial Data	Built-in OSC.	Ext. Crystal	Package
HT1620	2.4V~3.3V	32×4, 32×3, 32×2	3/2V$_{DD}$	1/2, 1/3	—	1	—	√	64LQFP
HT1620G									Gold bump
HT1621	2.4V~5.2V	32×4, 32×3, 32×2	≤ V$_{DD}$	1/2, 1/3	—	1	√	√	44LQFP, 48SSOP/LQFP
HT1621G									Gold Bump
HT1622	2.7V~5.2V	32×8	≤ V$_{DD}$	1/4	—	1	√	—	44/52/64LQFP
HT1622G									Gold Bump
HT1620	2.7V~5.2V	32×8	≤ V$_{DD}$	1/4	—	1	—	√	64LQFP
HT1623	2.7V~5.2V	48×8	≤ V$_{DD}$	1/4	—	1	√	√	100LQFP
HT1625	2.7V~5.2V	64×8	≤ V$_{DD}$	1/4	—	1	√	√	100LQFP
HT1626	2.7V~5.2V	48×16	≤ V$_{DD}$	1/5	—	1	√	√	100LQFP
HT1628	2.4V~5.5V	116×2,116×1	≤ V$_{DD}$	1/1, 1/2	—	1	√	√	128LQFP
HT1629G	2.4V~5.5V	240×2, 240×1	2.4V~5.5V	1/1, 1/2	—	1	√	√	Gold Bump
HT1647	2.7V~5.2V	64×16	≤ V$_{DD}$	1/4, 1/5	4	4	√	√	100LQFP
HT1647G									Gold Bump

High Noise Immunity LCD Controller & Driver

Part No.	VDD	Max. Resolution Segment × Common	LCD Voltage	Bias	Power Saving Mode	Interface	Keyscan	Package
HT16C21	2.4V~5.5V	20×4, 16×8	≤ V$_{DD}$	1/3, 1/4	—	I²C	—	16NSOP 20/24/28SOP
HT16C22	2.4V~5.5V	44×4	≤ V$_{DD}$	1/2, 1/3	—	I²C	—	48/52LQFP
HT16C22G								Gold Bump
HT16C23	2.4V~5.5V	56×4, 52×8	2.4V~5.5V	1/3, 1/4	—	I²C	—	48/64LQFP
HT16C23G								Gold Bump
HT16C24	2.4V~5.5V	72×4, 68×8, 60×16	2.4V~5.5V	1/3, 1/4, 1/5	—	I²C	—	64/80LQFP
HT16C24G								Gold Bump
HT16K23	2.4V~5.5V	20×4	= V$_{DD}$	1/3	—	I²C	20×1	28SOP
		16×8		1/4			16×1	
HT9B92	2.4V~5.5V	36×4	≤ V$_{DD}$	1/2, 1/3	√	I²C	—	48LQFP/TSSOP
HT9B92G		40×4						Gold Bump
HT9B95A		35×8		1/4				48TSSOP, 52LQFP
HT9B95B	2.4V~5.5V	43×4	2.4V~5.5V	1/3	√	I²C	—	52LQFP
		39×8		1/4				
HT9B95G		43×4		1/3				Gold Bump
		39×8		1/4				

Low Voltage LCD Controller & Driver

Part No.	VDD	Max. Resolution Segment × Common	LCD Voltage	Bias	Power Saving Mode	Interface	LED	Keyscan	Package
HT16L21	1.8V~5.5V	32×4	2.4V~6.0V	1/2, 1/3	—	I²C, SPI 3-Wire	8	—	44LQFP
HT16L23	1.8V~5.5V	52×4, 48×8	2.4V~6.0V	1/3, 1/4	—	I²C, SPI 3-Wire	8	—	64LQFP
HT16LK24	1.8V~5.5V	67×1, 67×2, 67×3, 67×4, 63×8	2.4V~6.0V	1/1, 1/2, 1/3, 1/4	√	I²C, SPI 3-Wire	12 (128 for each dot)	4×12	64/80LQFP

LED Controller & Driver

RAM Mapping LED Controller & Driver

Part No.	VDD	LED_VDD	Max. Resolution Row×Common	Row Source Current (Min.)	Row Sink Current (Min.)	Com Source Current (Min.)	Com Sink Current (Min.)	Interface	PWM Gray Scal	Constant Current	Key-scan	Package
HT1632C	4.5V~5.5V	—	32×8, 24×16	50mA	12mA	45mA	250mA	4-Wire	16Level for Global	—	—	52LQFP
			24×8									48LQFP
HT1635A	4.5V~5.5V	—	44×8	50mA	10mA	45mA	250mA	4-Wire	16Level for Global	—	—	64LQFP
HT1635B								I²C				
HT16K33	4.5V~5.5V	—	16×8	20mA ± 5%	6mA	20mA	160mA	I²C	16Level for Global	—	13×3	28SOP
			12×8								10×3	24SOP
			8×8								8×3	20SOP
HT16D35A	2.7V~5.5V	4.5V~5.5V	28×8	—	30mA ± 3% @R_EXT=500kΩ	250mA	45mA	3-Wire SPI	16Level for each dot	√	—	48LQFP-EP
HT16D35B								I²C				

VFD Controller & Driver

VFD Controller & Driver

Part No.	VDD	Segment	Digit	Output Voltage	Key Matrix	General Input	LED Output	Dimming Step	Package
HT16511	3.0V~5.5V	12~20	16~8	V_{DD}~35V	12×4	4	5	8	52LQFP
HT16512	3.0V~5.5V	11~16	11~6	V_{DD}~35V	6×4	4	4	8	44LQFP
HT16515	3.0V~5.5V	16~24	12~4	V_{DD}~35V	16×2	—	4	8	44LQFP

Dot Character VFD Controller & Driver

Part No.	VDD	Segment	Digit	Output Voltage	Display RAM	CGROM	CGRAM	Package
HT16528-001 HT16528-002 HT16528-003	2.7V~5.5V	80	24	80V	80×8 bits	240×5×8 bits	8×5×8 bits	144LQFP

Note: 1. The AD suffix in the Segment column represents additional data segment outputs.
2. The 001, 002 and 003 part number suffix represents different language and symbol character ROM code types.

VFD Clock

Part No.	VDD	Function Description	IDD Max.	Package
HT16561	4V~18V	1/1 Duty, 12Hr	1.6mA	44QFP

Segment VFD Driver

Part No.	VDD	Output Voltage	Output Driver	Output Current	Cascade	Package
HT16506	3.0V~5.5V	20V~80V	64	20mA	√	80LQFP

3-Wire EEPROM

3-wire EEPROM

Part No.	Capacity	VDD	Clock Rate (MHz)	Write Speed @2.4V (ms)	Operating Current @5V (mA)	Standby Current @5V (µA)	Package
HT93LC46	64×16/128×8	1.8V~5.5V	2	5	5	2	8DIP/SOP/TSSOP

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

I²C EEPROM

I²C EEPROM

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

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

General OP Amplifier

General Purpose OP Amplifier

Part No.	Description	OP No.	VDD	BW(Hz)	Current(µA)/OP	Package
HT9231	220µA, 2.3MHz Single OP amplifier	1	2.0V~5.5V	2.3M	220	SOT23-5
HT9232	220µA, 2.3MHz Dual OP amplifier	2	2.0V~5.5V	2.3M	220	8DIP/SOP
HT9234	220µA, 2.3MHz Quad OP amplifier	4	2.0V~5.5V	2.3M	220	14DIP/SOP
HT9251	50µA, 550kHz Single OP amplifier	1	1.8V~5.5V	550K	50	SOT23-5
HT9252	50µA, 550kHz Dual OP amplifier	2	1.8V~5.5V	550K	50	8DIP/SOP
HT9254	50µA, 550kHz Quad OP amplifier	4	1.8V~5.5V	550K	50	14DIP/SOP
HT9274	Quad micropower OP amplifier	4	1.6V~5.5V	100K	3	14DIP/SOP
HT9291	TinyPower™ Single OP amplifier	1	1.4V~5.5V	11K	0.6	SOT23-5
HT9292	TinyPower™ Dual OP amplifier	2	1.4V~5.5V	11K	0.6	8DIP/SOP
HT9294	TinyPower™ Quad OP amplifier	4	1.4V~5.5V	11K	0.6	14DIP/SOP
HT92232	16µA, 300kHz, Rail to Rail, Dual OP amplifier	2	2.1V~5.5V	300K	16	8SOP/MSOP
HT92252	40µA, 1MHz, Rail to Rail, Dual OP amplifier	2	2.1V~5.5V	1M	40	8SOP/MSOP

Audio Amplifier

Class AB Audio Amplifier

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

Class D Audio Amplifier

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

Analog

CCD/CIS Analog Signal Processor

CCD/CIS Analog Signal Processor

Part No.	AVDD/VDD	A/D (Bit)	Input CH.	MSPS	Clamp Bias	PGA	Prog. Offset	Full Scale	Other Features	Power Consumption	Package
HT82V36	3.0V~3.6V	16	1	10 (CCD:6)	2.5V/2.0V	1~5.85V/V (6-bit)	±100mV (9-bit)	1.4V	—	56mW/1µA	28SSOP
HT82V38	3.15V~3.45V	16	3/2/1	30/30/20	0.45V~2.7V (4-bit)	1~6.25V/V (6-bit)	±250mV (9-bit)	1.6V/2V	—	300mW/10µA	28SSOP
HT82V42	3.0V~3.6V	16	1	15	0.4V~3.0V (4-bit)	0.7~7.84V/V (8-bit)	±315mV (8-bit)	2V	—	188mW/300µA	20SSOP
HT82V46	3.0V~3.6V	16	3/2/1	45/45/45	0.4V~3.0V (4-bit)	0.68~7.8V/V (9-bit)	±260mV (8-bit)	1.2V/2V	—	528mW/130µA	28SSOP 28TSSOP-EP
HT82V48	3.0V~3.6V	16×2	3×2	60×2	0.4V~3.0V (4-bit)	0.65~6.0V/V (9-bit)	±290mV (8-bit)	1.2V/2V	—	925mW/400µA	48LQFP-EP
HT82V62	3.0V~3.6V	16	3/2/1	45/45/30	0.26V~2.68V (4-bit)	0.7~7.84V/V (8-bit)	±300/600mV (±9-bit) ~ 1024~1008LSB (±6-bit)	1.2V/2.4V	TG, BLC, LVDS	900mW/13mA	48LQFP-EP

Currency Recognition ASSP Processor

CIS Analog Front End Processor

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

CIS Digital Front End Processor

Part No.	AVDD/VDD	CIS Module				Shading Correction		Line Information	Others	Output	Power Consumption	Package
		Channel	MSPS	Element	LED	Gain	Offset					
HT82V70	3.0V~3.6V	3~6 ×2	120×2	1,584	6×2	0x ~ 8x (10-bit)	0 ~ -255 (8-bit)	Index, Left/Right Boundary, Max, Min, Sum, Histogram	COMP, TG, I²C, SPI	VPFE, EMIFA	400mW/3mW	100LQFP
HT82V72		3×2	60×2		6×1				AFE×2 COMP, TG, I²C, SPI		1100mW/10µW	64TQFP-EP

Video

Miscellaneous

IGBT Driver

Part No.	Description	VIN	LDO	Level Shifter	Voltage Detect Protection	Package
HT45B1S	IGBT Driver with LDO and Voltage Detector	6.0V~24V	5.0V	√	√	8SOP

Timepiece

Part No.	VDD	V$_{BAT}$	I$_{DD}$ (μA)	I$_{BAT}$ (μA)	I$_{STB}$ (μA)	External X'tal Osc.	Build in Memory (Bytes)	Oscillator Compensation	Package
HT1380A	2.0V~5.5V	—	1.0 at 5V	—	0.1	32.768kHz	—	—	8DIP
HT1381A									8SOP
HT1382	2.7V~5.5V	2.0V~5.5V	15 at 3V	1.2 at 3V	0.1	32.768kHz	4	√	8DIP/SOP 8/10MSOP

Crypto IC

AES Crypto Controller

Part No.	VDD	Data EEPROM	Key Bits	Physical Security	Data Integrity	UID	PID	VID	Crypto Algorithm	Random Number	Inter-face	Package
HT45B6330	1.8V~ 5.5V	1K Bytes	128 Bits 192 Bits 256 Bits	Metal Shield Frequency Detector Voltage Detector Temperature Detector EEPROM Data Scrambling	16-bit CRC	8 Bytes	12 Bytes	12 Bytes	AES(ECB,CBC,CTR,CFB,OFB) SHA256	TRNG	SPI/I²C×1 NFC×1	8SOP

8-Bit MCU Programming Tools

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

Hardware

ICE

Model	Function	Support Software
HT-ICE	LPT Type in-circuit emulator	HT-IDE3000
e-ICE	USB Type in-circuit emulator	HT-IDE3000
e-Link	On Chip Debug Support(OCDS) Type MCU debug adapter	HT-IDE3000
	On Chip Debug Support (OCDS) debug adapter for HT85 series	Keil C51 Development Tools
e-FPCB (e-Link selected item)	OCDS EV Flex Cable Converter	—

Programmer

Model	Function	Support Software
e-WriterPro	Universal Writer for OTP/Flash MCU	HOPE3000
e-Socket	Adaptors used together with e-WriterPro	HOPE3000
EIC-300	Slimmed-down ICP programmer for Flash MCU	HOPE3000

Development Kit

Model	Function	Note
ESK-66F-A01	HT66F50 Development Board (Starter Kit for HT66F50)	(ESK-200 + ESK-201 + e-Link + M1001D + D1003C + mini USB cable + e-cable1225A)

Development Platform

Model	Function	Note
Holtek USB Workshop	Development Platform for USB MCU	This board can be used with the ESK66FB-200 + e-Link.

Software*

Software

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

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

HT-IDE3000 Development Environment

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

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

HT-ICE — Holtek In-Circuit Emulator

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

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

e-ICE

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

Holtek New Universal Writer − e-WriterPro

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

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

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

e-Socket			
No.	Product Name	Supported Package	Suggested Programming Times
1	ESKT10MSOPA	8MSOP, 10MSOP	10,000
2	ESKT16NSOPC	8SOP, 14SOP, 16NSOP (Applicable beside the HT48RA0-6 series MCU)	10,000
3	ESKT16NSOPHIRCA	16NSOP (for HT48RA0-6 only)	10,000
4	ESKT16QFNA	16QFN	5,000
5	ESKT20QFN4A	20QFN (4mm × 4mm)	5,000
6	ESKT20QFN5A	20QFN (5mm × 5mm)	5,000
7	ESKT20TSSOPA	16TSSOP, 20TSSOP	10,000
8	ESKT28SSOPC	16SSOP(150mil), 20SSOP(150mil), 24SSOP(150mil), 28SSOP(150mil) (Applicable beside the HT48RA0-6 series MCU)	10,000
9	ESKT28SSOPHIRCA	20SSOP (for HT48Ra0-6 only)	10,000
10	ESKT28SOPC	16SOP, 18SOP, 20SOP, 24SOP, 28SOP	10,000
11	ESKT28SSOPHIRCA	20SSOP (for HT48RA0-6 only)	10,000
12	ESKT30SSOPA	20SSOP(209mil), 24SSOP(209mil), 28SSOP(209mil)	10,000
13	ESKT32QFPA	32LQFP	10,000
14	ESKT32QFNA	32QFN	5,000
15	ESKT32TSOPA	32TSOP	5,000
16	ESKT40DIPC	8DIP, 16DIP, 18DIP, 20DIP, 40DIP, 22SKDIP, 24SKDIP, 28SKDIP	25,000
17	ESKT40QFN5A	40QFN (5mm × 5mm)	5,000
18	ESKT40QFN6A	40QFN (6mm × 6mm)	5,000
19	ESKT44QFPA	44QFP, 44LQFP (FP 3.2mm)	10,000
20	ESKT44LQFPC	44LQFP (FP 2.0mm)	10,000
21	ESKT46QFNA	46QFN (6.5mm × 4.5mm)	5,000
22	ESKT48QFNA	48QFN	5,000
23	ESKT48LQFPA	48LQFP (Applicable beside the HT49RA0-6 & HT32Fxx series MCU)	10,000
24	ESKT48LQFPHIRCA	48LQFP(for HT49RA0-6 only)	10,000
25	ESKT52QFPA	52QFP	10,000
26	ESKT52LQFPA	52LQFP	5,000
27	ESKT56SSOPA	48SSOP, 56SSOP	10,000
28	ESKT64LQFP7A	64LQFP (7mm × 7mm) (Applicable beside the HT32Fxx series MCU)	5,000
29	ESKT64LQFP10A	64LQFP (10mm × 10mm) (Applicable beside the HT32Fxx series MCU)	10,000
30	ESKT80LQFPA	80LQFP	10,000
31	ESKT100QFPA	100QFP	5,000
32	ESKT100LQFPA	100LQFP (Applicable beside the HT32Fxx series MCU)	5,000
33	ESKT128QFPA	128QFP	10,000
34	ESKT144LQFPA	144LQFP	5,000

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

2. ESKxxxxxC is completely compatible with ESKxxxxxA.

8-Bit MCU Tools Indexing Table

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

8-Bit MCU Tools					
Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCK	OCDSDA / OCDSCK
BC48R2020	e-ICE	M1001D + D5002A	OTP Type-2B	ICP-1B	
BC66F840	e-Link	e-Link + BC66V840	Flash Type-9	ICP-2C / PB4 / PB2	PB4 / PB2
BC66F850		e-Link + BC66V850			
BC68F0031	e-Link	e-Link + BC68V0031 e-Link + BC68V0031-10 + e-FADP08N	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC68F2123	e-Link	e-Link + BC68V2123	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC68F2130		e-Link + BC68F2130	Flash Type-16		
BC68F2140		e-Link + BC68F2140			
BC68FB540	e-Link	e-Link + BC68VB540	Flash Type-7A	ICP-2C / UDN / RES	PA0 / RES
BH45F0031	e-Link	e-Link + BH45V0031 + e-FADP08N	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BH66F2470	e-Link	e-Link + BH66V2470	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2470		e-Link + BH67V2470			
BH66F2260	e-Link	e-Link + BH66V2260	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2260		e-Link + BH67V2260			
BH67F2270		e-Link + BH67V2270			
BH66F5233	e-Link	e-Link + BH66V5233	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
		e-Link + BH66V5233-10 + e-FADP10N3			OCDSDA / OCDSCK
BS66F340	e-Link	e-Link + BS66V340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS66F350		e-Link + BS66V350	Flash Type-9B		
BS66F360		e-Link + BS66V360	Flash Type-9C		
BS66F370		e-Link + BS66V370			
BS66FV340	e-Link	e-Link + BS66VV340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS66FV350		e-Link + BS66VV350	Flash Type-9B		
BS66FV360		e-Link + BS66VV360	Flash Type-9C		
BS67F340	e-Link	e-Link + BS67V340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS67F350		e-Link + BS67V350	Flash Type-9B		
BS67F360		e-Link + BS67V360	Flash Type-9C		
BS67F370		e-Link + BS67V370			
BS82B12A-3	e-Link	e-Link + BS82BV12A-3	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS82C16A-3		e-Link + BS82CV16A-3			
BS82D20A-3		e-Link + BS82DV20A-3	Flash Type-9B		
BS83A02A-4	e-Link	e-Link + BS83A02A + (Optional e-FADP06T)	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BS83A04A-3, BS83A04A-4		e-Link + BS83V04A + (Optional e-FADP08N-BS or e-FADP10M-BS)			
BS83B04A-4		e-Link + BS83BV04A + (Optional e-FADP08N-BS or e-FADP10M-BS)			OCDSDA / OCDSCK
BS83B08A-3, BS83B08A-4		e-Link + 83V08AV15			
BS83B12A-3, BS83B12A-4		e-Link + BS83V12A			PA0 / PA2
BS83B16A-3, BS83B16A-4		e-Link + BS83V16A			
BS84B06A-3	e-Link	e-Link + BS84BV06A-3	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS84B08A-3		e-Link + BS84V08A			
BS84C12A-3		e-Link + BS84V12A			
BS86B12A-3	e-Link	e-Link + BS86BV12A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS86C16A-3		e-Link + BS86CV16A-3			
BS86D20A-3		e-Link + BS86DV20A-3	Flash Type-9B		
BS87B12A-3	e-Link	e-Link + BS87BV12A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS87C16A-3		e-Link + BS87CV16A			
BS87D20A-3		e-Link + BS87DV20A	Flash Type-9B		
HT37A30, HT37A40, HT37A50, HT37A60, HT37A70	Demo Board	HT-VMS-MB	—	—	—
HT37B90					
HT45F0027	e-Link	e-Link + HT45V0027	—	—	PA0 / PB0
HT45F2002	e-Link	e-Link + HT66V0042 + HT45B0005 + (e-FADP20S-HT45F2002)	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2

8-Bit MCU Tools

Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCK	OCDSDA / OCDSCK
HT45F23A	e-ICE	M1001D + D1088A	Flash Type-6	ICP-2B	
HT45F24A		M1001D + D1095A			
HT45F3420	e-Link	e-Link + HT45V3420 + (Optional e-FADP08N or e-FADP10M2)	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F3430		e-Link + HT45V3430			
HT45F3520	e-Link	e-Link + HT45V3520	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F3530		e-Link + HT45V3530			
HT45F3630	e-Link	e-Link + HT45V3630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F3820	e-Link	e-Link + HT45V3820	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F3830		e-Link + HT45V3830			
HT45F39, HT45F391	e-Link	HT45V39 + e-Link	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F4630	e-Link	e-Link + HT45V4630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F4830	e-Link	e-Link + HT45V4830	Flash Type-9	ICP-2L / PA0 / PA2	OCDSDA / OCDSCK
HT45F3W	e-Link	e-Link + HT45F3W	Flash Type-9C	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			
HT45FH4MA-1		e-Link + HT45VH4MA-1			
HT45F4N		e-Link + HT45V4N			
HT45FH4N		e-Link + HT45VH4N			
HT45F5N		e-Link + HT45V5N			
HT45FH5N		e-Link + HT45VH5N			
HT45FH3T	e-Link	e-Link + HT45VH3T + (Optional e-FADP16S)	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45FH4J		e-Link + HT45VH4J		ICP-2C / PA0 / PA2	PA0 / PA2
HT45F56	e-Link	e-Link+HT45V56 + (Optional FPCB)	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F5Q	e-Link	e-Link + HT45V5Q	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F5R		e-Link + HT45V5R			
HT45F65	e-Link	e-Link + HT45V65	Flash Type-9B	ICP-2C / PA0 / RES	PA0 / RES
HT45F66, HT45F67		e-Link + HT45V67	Flash Type-9C		
HT45F75	e-Link	e-Link + HT45V75	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F77		e-Link + HT45V77	Flash Type-9B		
HT45R4U	e-ICE	M1001D + D1093A	OTP Type-2B	ICP-1B	
HT46R002, HT46R003, HT48R002, HT48R003	e-ICE	M1001D + D1091A	OTP Type-2B	ICP-1B	
HT46R003B		M1001D + D1105A			
HT46R004		M1001D + D1096A			
HT46R62, HT46R64, HT46R65	HT-ICE(S)	CICE46L000007A	OTP Type-0A	ICP-1A	
HT46RU66, HT46RU67			OTP Type-0D		
HT46R0662, HT46R067	e-ICE	M1001D + D2005A	OTP Type-2	ICP-1D	
HT46R0664		M1001D + D1064B	OTP Type-2B	ICP-1B	
HT46R064B, HT46R065B, HT46R066B, HT48R063B, HT48R064B, HT48R065B, HT48R066B	e-ICE	M1001D + D2005A	OTP Type-2A	ICP-1D	
HT46R064D, HT46R065D, HT46R066D	e-ICE	M1001D + D1037B	OTP Type-2A	ICP-1D	
HT4RA0-6	e-ICE	M1001D + D1086A	OTP Type-2		
HT49C30-1, HT49C50-1, HT49C70-1	HT-ICE(S)	CICE49U000006A	—	—	
HT49R10A-1, HT49R30A-1, HT49R50A-1, HT49R70A-1			OTP Type-0A	ICP-1A	
HT49RA0-6	e-ICE	M1001D + D1049A	OTP Type-2B		
HT56R668, HT56R678	HT-ICE(S)	CICE56R678008C	OTP Type-1E	ICP-1A	
HT56R688			OTP Type-0D		
HT56RB27, HT56RB688	e-ICE	M1001D + D2003A	OTP Type-6	ICP-1C	
HT56RU25	e-ICE	M1001D + D1090A	OTP Type-6A	ICP-1C	

8-Bit MCU Tools

Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCK	OCDSDA / OCDSCK
HT66F002	e-Link	e-Link + HT66V002 + (Optional e-FADP08N or e-FADP10M2)	Flash Type-9	ICP-2C / PA0 / PA7	OCDSDA / OCDSCK
HT66F0025		e-Link + HT66V0025 + (Optional e-FADP08N or e-FADP10N2)			
HT66F003		e-Link + HT66V003		ICP-2C / PA0 / PA2	PA0 / PA2
HT66F004		e-Link + HT66V004			
HT66F007		e-Link + HT66V007 + (Optional e-FADP08D or e-FADP08N or e-FADP10M)		ICP-2C / PA0 / PA1	OCDSDA / OCDSCK
HT66F008		e-Link + HT66V008 (Optional e-FADP08D or e-FADP08N or e-FADP10M)			
HT66F0042		e-Link + HT66V0042		ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0082		e-Link + HT66V0082			
HT66F016, HT66F017	e-ICE	M1001D + D1070A	OTP Type-6A	ICP-2B	
HT66F0172, HT66F0174	e-Link	e-Link + HT66V0174	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0175		e-Link + HT66V0175			
HT66F0176		e-Link + HT66V0176			
HT66F018		e-Link + HT66V018			
HT66F0182		e-Link + HT66V0182			
HT66F0185		e-Link + HT66V0185			
HT66F0186		e-Link + HT66V0186	Flash Type-14		
HT66F0187		e-Link + HT66V0187	Flash Type-9		
HT66F13	e-ICE	M1001D + D1007B	Flash Type-6	ICP-2B	
HT66F14		M1001D + D1008B			
HT66F15		M1001D + D1004B			
HT66F2350	e-Link	e-Link + HT66V2350	Flash Type-10B	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2360		e-Link + HT66V2360	Flash Type-10C		
HT66F2370		e-Link + HT66V2370	Flash Type-10C		
HT66F2390		e-Link + HT66V2390	Flash Type-10D		
HT67F2350	e-Link	e-Link + HT67V2350	Flash Type-10B	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F2360		e-Link + HT67V2360	Flash Type-10C		
HT67F2370		e-Link + HT67V2370	Flash Type-10C		
HT67F2390		e-Link + HT67V2390	Flash Type-10D		
HT66F20-1, HT68F20-1	e-Link	e-Link + HT66V20-1	Flash Type-6	ICP-2B / PA0 / PA2	PA0 / PB0
HT66F30-1, HT68F30-1	e-ICE	M1001D + D1078A		ICP-2B	
HT66F24D, HT66F25D	e-ICE	M1001D + D1067A	Flash Type-6A	ICP-2B	
HT66F26D	e-Link	e-Link + HT66V26D			
HT66F302	e-Link	e-Link + HT66V302 + (Optional e-FADP08N or e-FADP10N2)	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
HT66F303		e-Link + HT66V303			PA0 / PA2
HT66F317		e-Link + HT66V317	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F318		e-Link + HT66V318			
HT66F319		e-Link + HT66V319	Flash Type-9B		
HT66F40, HT68F40	e-ICE	M1001D + D1002C	Flash Type-6	ICP-2B	
HT66F50, HT68F50		M1001D + D1003C			
HT66F60		M1001D + D1009B			
HT66F4360	e-Link	e-Link + HT66V4360	Flash Type-7C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F4370		e-Link + HT66V4370			
HT66F4390		e-Link + HT66V4390	Flash Type-15J		
HT66F4530	e-Link	e-Link + HT66V4530	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F4540		e-Link + HT66V4540			
HT66F4550		e-Link + HT66V4550	Flash Type-9B		
HT66F489	e-Link	e-Link + HT66V489	Flash Type-9B	ICP-2C	
HT66F60A, HT66F70A	e-Link	e-Link + HT66V70A	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FB540	e-Link	e-Link + HT66VB540	Flash Type-7A	ICP-2C / UDN / $\overline{RES}$	PA0 / $\overline{RES}$
HT66FB542		e-Link + HT66VB542			
HT66FB550		e-Link + HT66VB550			
HT66FB560		e-Link + HT66VB560	Flash Type-7B		
HT66FB570		e-Link + HT66VB570	Flash Type-7E		
HT66FB582		e-Link + HT66VB582	Flash Type-15N		

8-Bit MCU Tools

Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCK	OCDSDA / OCDSCK
HT66FB572	e-Link	e-Link + HT66FB572	Flash Type-15A	ICP-2C / UDN / $\overline{RES}$	PA0 / $\overline{RES}$
HT66FB574		e-Link + HT66FB574	Flash Type-15E		
HT66FB576		e-Link + HT66VB576	Flash Type-15E		
HT66FM5230	e-Link	e-Link + HT66VM5230	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FM5240		e-Link+HT66VM5240			
HT66FV130	e-Link	e-Link + HT66VV130	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FV140		e-Link + HT66VV140	Flash Type-9		
HT66FV150		e-Link + HT66VV150	Flash Type-9B		
HT66FV160		e-Link + HT66VV160	Flash Type-9C		
HT66FV240	e-Link	e-Link + HT66VV240	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FW2230	e-Link	e-Link + HT66VW2230	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F30, HT67F40	e-ICE	M1001D + D2004C	Flash Type-6	ICP-2B	
HT67F50, HT67F60		M1001D + D2004D			
HT67F60A	e-Link	e-Link + HT67V60A	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F70A		e-Link + HT67V70A			
HT67F86A		e-Link + HT67V86A	Flash Type-9D		
HT67F489	e-Link	e-Link + HT67V489	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F4892		e-Link + HT67V4892			
HT67F5630	e-Link	e-Link + HT67V5630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F5640		e-Link + HT67V5640			
HT67F5650		e-Link + HT67V5650	Flash Type-9B		
HT67F5660		e-Link + HT67V5660	Flash Type-9C		
HT68F002	e-Link	e-Link + HT68V002 + (Optional e-FADP08N or e-FADP10M2)	Flash Type-9	ICP-2C / PA0 / PA7	OCDSDA / OCDSCK
HT68F0025		e-Link + HT68V0025 + (Optional e-FADP08N or e-FADP10N2)		ICP-2C / PA0 / PA7	OCDSDA / OCDSCK
HT68F003		e-Link + HT68V003		ICP-2C / PA0 / PA2	PA0 / PA2
HT68FB240	e-Link	e-Link + HT68VB240	Flash Type-7A	ICP-2C / UDN / $\overline{RES}$	PA0 / $\overline{RES}$
HT68FB540	e-Link	e-Link + HT68VB540	Flash Type-7A	ICP-2C / UDN / $\overline{RES}$	PA0 / $\overline{RES}$
HT68FB550		e-Link + HT68VB550			
HT68FB560		e-Link + HT68VB560	Flash Type-7B		
HT67F370	e-Link	e-Link + HT67V370	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
HT69F340		e-Link + HT69V340	Flash Type-9		
HT69F350		e-Link + HT69V350	Flash Type-9B		
HT69F360		e-Link + HT69V360	Flash Type-9C		
HT69F30A, HT69F40A, HT69F50A	e-Link	e-Link + HT69V50A	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT82A525R	e-ICE	M1001C + D1068A	OTP Type-0B	ICP-1A	
HT82B40R, HT82B42R	e-ICE	M1001D + D1081A	OTP Type-0B	ICP-1A	
HT82B40A			—	—	
HT82R732	e-ICE	M1001D + D1055B	OTP Type-2	ICP-1D	
HT86B10, HT86B30, HT86B60, HT86B70, HT86B80	HT-ICE(S)	CICE86B000008A	—	—	
HT86BR10, HT86BR30, HT86BR60			OTP Type-0C	ICP-1A	
HT98F069	e-Link	e-Link + HT98V069	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2

32-Bt 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, Socket
HT32F1653, HT32F1654	e-Link32Pro	ESK32-360, ESK32-370, ESK32-360SK	e-Writer32, ESKT3248LQFPB, ESKT3264LQFP7B ESKT32ICPB
HT32F1655, HT32F1656	e-Link32Pro	ESK32-300, ESK32-310, ESK32-300SK	e-Writer32, ESKT3248LQFPB, ESKT3264LQFP7B ESKT32100LQFPB, ESKT32ICPB
HT32F1755, HT32F1765	e-Link32Pro	ESK32-200, ESK32-210, ESK32-200SK	e-Writer32, ESKT3248LQFPB, ESKT3264LQFP7B ESKT32100LQFPB, ESKT32ICPB
HT32F2755	e-Link32Pro	ESK32-220	e-Writer32, ESKT3248LQFPB, ESKT3264LQFP7B ESKT32100LQFPB, ESKT32ICPB
HT32F52220, HT32F52230	e-Link32Pro	ESK32-30504, ESK32-20001, ESK32-21001	e-Writer32, ESKT3228SSOPB, ESKT3233QFN4B, ESKT32ICPB
HT32F52231, HT32F52241	e-Link32Pro	ESK32-30503, ESK32-20001, ESK32-21001	e-Writer32, ESKT3228SSOPB, ESKT3233QFN4B, ESKT3248LQFPB, ESKT32ICPB
HT32F52331, HT32F52341	e-Link32Pro	ESK32-30502, ESK32-20001, ESK32-21001	e-Writer32, ESKT3233QFN4B, ESKT3248LQFPB, ESKT32ICPB
HT32F52342, HT32F52352	e-Link32Pro	ESK32-30501, ESK32-20001, ESK32-21001	e-Writer32, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB

Hardware

ICE

Model	Function	Support Software
e-Link32 Pro	On Chip Debug Support (OCDS) new debug adapter for HT32 series	Keil µVision, IAR EWARM

Programmer

Model	Function	Support Software
e-Writer32	HT32 series MCU Dedicated Writer	HOPE3000 For HT32 series MCU
e-Socket32	Adaptors used together with e-Writer32	HOPE3000 For HT32 series MCU

Development Kit

Model	Function	Note
ESK32-200	HT32F1755/1765 Development Board	HT32F1765 DVB + mini USB cable + 2.8 inches TFT-LCD Module * This board can be used with the e-Link32 Pro providing a complete development kit.
ESK32-210	HT32F1755/1765 Development Board	HT32F1765 DVB + mini USB cable * This board can be used with the e-Link32 Pro providing a complete development kit.
ESK32-220	HT32F2755 Development Board	HT32F2755 DVB + mini USB cable + 2.8 inches TFT-LCD Module * This board can be used with the e-Link32 Pro providing a complete development kit.
ESK32-300	HT32F1655/1656 Development Board	HT32F1656 DVB + mini USB cable + 2.8 inches TFT-LCD Module * This board can be used with the e-Link32 Pro providing a complete development kit.
ESK32-310	HT32F1655/1656 Development Board	HT32F1656 DVB + mini USB cable * This board can be used with the e-Link32 Pro providing a complete development kit.
ESK32-360	HT32F1653/1654 Development Board	HT32F1654 DVB + mini USB cable + 2.8 inches TFT-LCD Module * This board can be used with the e-Link32 Pro providing a complete development kit.
ESK32-370	HT32F1653/1654 Development Board	HT32F1654 DVB + mini USB cable * This board can be used with the e-Link32 Pro providing a complete development kit.
ESK32-200SK	32-bit ARM Cortex-M3 HT32F1765 Starter Kit	This board has a built-in e-Link32 USB debug adapter.
ESK32-300SK	32-bit ARM Cortex-M3 HT32F1656 Starter Kit	This board has a built-in e-Link32 USB debug adapter.

Development Kit

Model	Function	Note
ESK32-360SK	32-bit ARM Cortex-M3 HT32F1654 Starter Kit	This board has a built-in e-Link32 USB debug adapter.
ESK32-30501	32-bit ARM Cortex-M0+ HT32F52352 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter.
ESK32-30502	32-bit ARM Cortex-M0+ HT32F52341 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter.
ESK32-30503	32-bit ARM Cortex-M0+ HT32F52241 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter.
ESK32-30504	32-bit ARM Cortex-M0+ HT32F52230 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter.
ESK32-20001	HT32 Series Expansion Board Basic	Expansion Board for ESK32-30xxx
ESK32-21001	HT32 Series Expansion Board Plus	Expansion Board for ESK32-30xxx
ESK32-A2A31	2.8 inches TFT-LCD Module	2.8 inches SPI / EBI LCD Module * This module can be used with the ESK32-20001/ ESK32-21001 providing a complete development kit.

MCU Programming Tools

Software		
Software		
Model	**Function**	**Support Hardware**
HOPE3000F or 32Bits	e-Writer programmer software for HT32 series MCUs	e-WriterPro
HT32 Flash Programmer	In-System / In-Application programmer software for HT32 series MCUs	ESK32-100, ESK32-200, ESK32-210
e-Link32 USB Driver	USB driver for the e-Link32 debug adapter	e-Link32
e-Link32 Keil Plugin	Keil plugin software to enable the e-Link32 to be used with the µVision4 / µVision5 IDE	e-Link32
e-Link32 IAR Plugin	IAR plugin software to enable the e-Link32 to be used with the EWARM IDE	e-Link32
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	

e-Link32 Debug Adapter

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

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

Part Number Index