



Microcontroladores & Wireless Holtek Semiconductor

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Helping 
Innovation

? Introducción:

- ? Sobre Holtek Semiconductors

? Microcontroladores 8 bits / 32 bits

- ? Microcontroladores de propósito general 8 bit.
- ? Microcontroladores de propósito general 32 bit.
- ? Microcontroladores dedicados para la gestión de baterías y energía.
- ? Soluciones Wireless, Bluetooth BLE, NFC, RF 2,4 GHz & 1GHz
- ? MCU Developer Platform, Dev Kits, IDE's, Programadores, Soporte, Ejemplos.

? Preguntas



Introducción Holtek Semiconductor

- ❑ Empresa líder en la fabricación de circuitos integrados ubicada en Taiwán.
- ❑ Principales actividades:
 - ❑ Diseño de microcontroladores, componentes periféricos
- ❑ En continua expansión en el diseño y fabricación de microcontroladores para nuevos diseños.



- ❑ Gama de productos en la actualidad:
 - ❑ MCU de propósito general (8/32 bits)
 - ❑ MCU para aplicaciones específicas:
 - Voz, comunicaciones, periféricos de PC, electrodomésticos, equipos médicos, automoción y seguridad, etc.
 - ❑ Otros dispositivos:
 - Control energía, control/gestión LCD y Led, sensores de huella de alta precisión, módulos con variedad de sensores y otros periféricos.

☐ Ventajas de usar Holtek:

- ☐ Alta calidad del dispositivo que incluye alta inmunidad al ruido y protección ESD
- ☐ Plazos de entrega extremadamente cortos
- ☐ Relación calidad/precio superior
- ☐ Disponibilidad de dispositivos tipo OTP y tipo Flash
- ☐ Desarrollo ASIC MCU y ASSP (Application Specific Standard Product)
- ☐ Disponibilidad de herramientas de diseño profesionales y compilador C



Clasificación Microcontroladores

- ❑ Enfocados mayoritariamente tanto a los MCU de 8 bits como los de 32 bits basados en ARM.
- ❑ Integran funciones tanto digitales como analógicas, como pueden ser ADC, comparadores, generadores PWM, drivers LCD/Led, interfaces USB, SPI, I2C o UART, funciones de voz, RF, etc.
- ❑ Distintos rangos de voltaje de funcionamiento y temperaturas
- ❑ Expandiéndose en el IOT

General Purpose MCU	Display MCU	1.8V~5.5V MCU
32-Bit Flash MCU 8-Bit Flash MCU High Supply Voltage Flash MCU	8-Bit LCD Display Flash MCU 8-Bit LCD / LED Flash MCU	1.8V~5.5V Flash MCU
USB MCU	Motor MCU & Peripheral	OPA MCU
USB Interface Flash MCU	DC Motor Flash MCU Motor Driver Peripheral	OPA Flash MCU
Health & Measurement	Security & Safety	Touch MCU & Peripheral
24-Bit A/D Flash MCU 24-Bit A/D Peripheral Health Care Flash MCU Measurement Flash MCU R to F MCU	Security & Safety Flash MCU Security & Safety IC	Touch Flash MCU Ultra-Low Power Touch Flash MCU Touch Key IC

Voice & Music MCU	Wireless	Communication
Cortex-M0+ 32-Bit Voice / Music Flash MCU Voice & Music Flash MCU Voice Record / Playback Flash MCU Sound Effect Flash MCU	BLE 2.4GHz RF Sub-1GHz RF NFC Infrared / Encoder / Decoder RF Module	Interface Bridge Telecom IC
Battery & Power Management	Display Driver	Special Purpose MCU
Battery Management Li Battery & Power Management Flash MCU Inverter Flash MCU LDO & Detector DC to DC Converter AC to DC Converter	LCD Controller & Driver LED Controller & Driver White LED Backlight Driver AC / DC LED Lighting Driver	Bank & Commercial Flash MCU Special Purpose Flash MCU Low Power Flash MCU CAN Bus Flash MCU USB Data Logger Flash MCU
Module	EEPROM Memory	Analog
RF Module Digital Sensor & Module	I/C EEPROM	General OP Amplifier Audio Amplifier 24-Bit A/D Peripheral

8 bits MCU

32-Bit Flash MCU

8-Bit Flash MCU

High Supply Voltage Flash MCU

8-Bit OTP MCU

- ▶ Small Package Flash MCU with EEPROM
- ▶ Flash MCU with EEPROM
- ▶ Flash MCU with High Current Driver
- ▶ A/D Flash MCU with EEPROM
- ▶ A/D Flash MCU with High Accuracy / Low Current LIRC
- ▶ Advanced A/D Flash MCU
- ▶ A/D Flash MCU
- ▶ A/D Flash MCU with High Current LED Driver

8 bits MCU

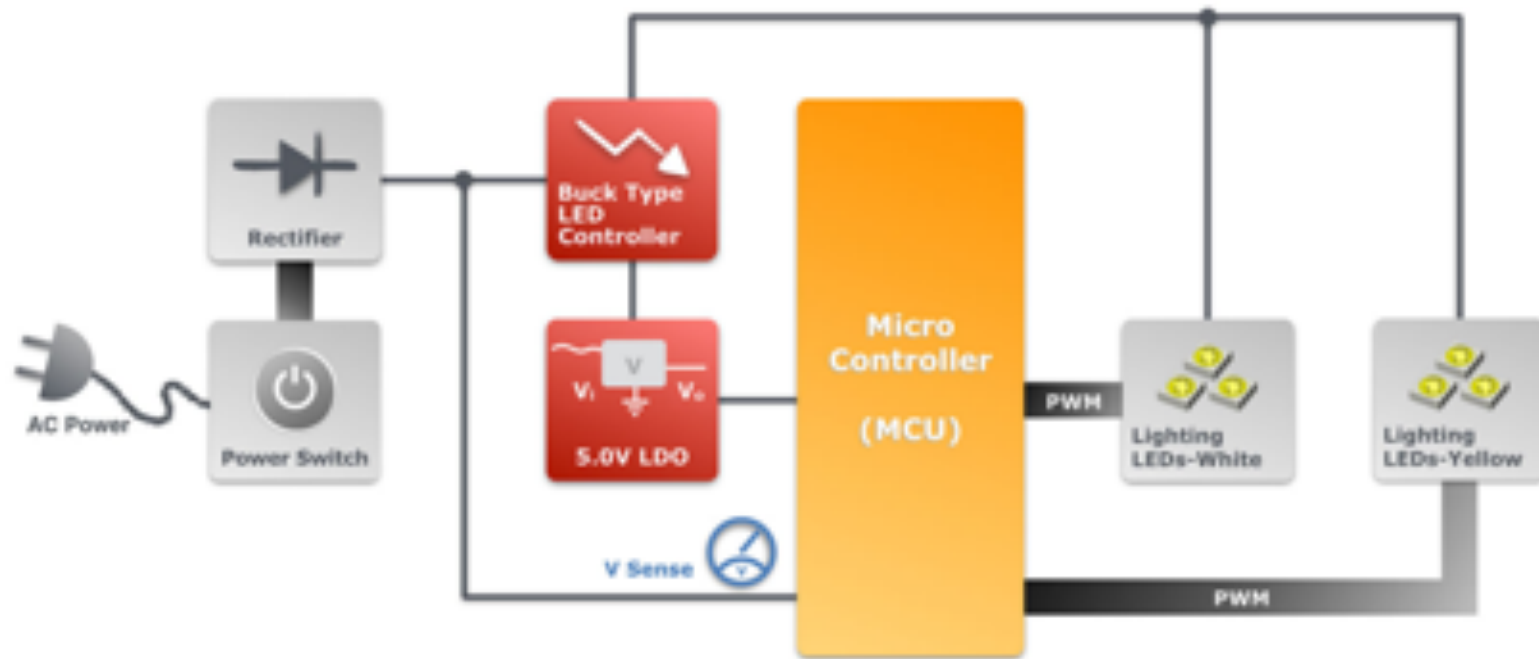
8-Bit Flash MCU																		
Small Package Flash MCU with EEPROM																		
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	PWM	Comp- arator	Interface	Package			
HT68F0017	8MHz	1.8V~5.5V	8MHz or 32kHz	0.5K×12	16×8	—	2	—	8	8-bit×1	—	—	—	—	8/10SOP			
HT68F302	4MHz 8MHz	1.8V~5.5V	4MHz, 8MHz or 32kHz	1K×14	64×8	32×8	2	—	8	10-bit STM×1 10-bit PTM×1	12-bit×4	—	—	—	8/10SOP			
HT68F002	8MHz	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×8	2	—	8	10-bit STM×1	—	—	—	—	8SOP, 10MSOP			
HT68F0021		1.8V~5.5V				32×14*			6	8-bit×1	10-bit×4	8-bit×1			8SOP			
HT68F002		2.2V~5.5V				32×8			4	8	10-bit STM×1	12-bit×4			—	—	—	8SOP, 10MSOP
HT68F0025				12-bit×4			—					—		—				8/10SOP
HT68F0025																		
HT68F007	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×16	160×8	512×8	8	—	8	10-bit CTM×2 16-bit STM×1	12-bit×5	—	1	—	8DIP/SOP 10MSOP			
HT68F008	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	4K×16	256×8	1024×8	8	—	8	10-bit CTM×2 16-bit STM×1	12-bit×5	—	1	—	8DIP/SOP 10MSOP			
HT68F2030	8MHz	1.8V~5.5V	8MHz or 32kHz	2K×15	128×8	32×8	4	—	14	10-bit CTM×1 10-bit PTM×1	12-bit×5	—	—	SP/PC×1 UART×1	8SOP, 10MSOP 16NSOP/QFN			
HT68F2040*	8MHz	1.8V~5.5V	8MHz or 32kHz	4K×16	512×8	512×8	8	√	18	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit×8	—	2	SP/PC,UART×1 UART×1	8SOP, 10MSOP 16NSOP/QFN 20SSOP			
HT68F2050*				8K×16														

8 bits MCU

A/D Flash MCU with EEPROM																	
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	RTC	Comparator	SCOM/ SSEG	High Current LED Driver	Interface	Package
HT66F017	8MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×16	128×8	64×8	8	—	14	16-bit CTM×1 16-bit STM×1	12-bit ×4	—	1	—	—	—	16NSOP
HT66F0172	8MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×16	128×8	—	8	—	18	10-bit PTM×2	12-bit ×8	—	—	—	—	—	20SOP/SSOP
HT66F0174									22								20SOP/SSOP
HT66F0175	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×16	128×8	64×8	8	—	22	10-bit PTM×2	12-bit ×8	√	—	SCOM×6 SSEG×14	22	SPi/PC×1	20SOP/SSOP
HT66F0176																SPi/PC×1 UART×1	24SOP/SSOP
HT66F0181	8MHz	1.8V~5.5V	8MHz or 32kHz	4K×15	128×8	32×15 ²	6	—	18	10-bit PTM×1 10-bit STM×1	10-bit ×8	—	—	—	18	—	16/20NSOP 20SOP/SSOP
HT66F0186	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	4K×16	1024×8	4096×8	8	—	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×8	√	1	SCOM×6 SSEG×18	26	SPi/PC×1 UART×1	20NSOP 24/28SOP 24/28SSOP
Advanced A/D Flash MCU																	
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	SCOM	RTC	Comparator	CRC	Interface	Package
HT66F2350	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	8K×16	768×8	256×8	16	√	44	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×12	4	√	2	√	SPi/PC×1 SPIA×1 UART×2	48LQFP
HT66F2362	8MHz 12MHz 16MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	16K×16	2048×8	1024×8	16	√	44	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×16	4	√	2	√	SPi/PC×1 SPIA×1 UART×2	28SOP, 32QFN 44/48LQFP
HT66F2370	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	3072×8	512×8	16	√	58	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×16	4	√	2	√	SPi/PC×1 SPIA×1 UART×3	48/64LQFP
HT66F2372		1.8V~5.5V				2048×8			44								28SOP 44/48LQFP
HT66F2390	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	64K×16	4096×8	1024×8	16	√	58	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×16	4	√	2	√	SPi/PC×1 SPIA×1 UART×3	48/64LQFP
Note: These devices are European standard IEC 60730 and U.S. standard UL 60730 certified.																	

8 bits MCU

Adjustable Colour Temperature LED Wall Switch

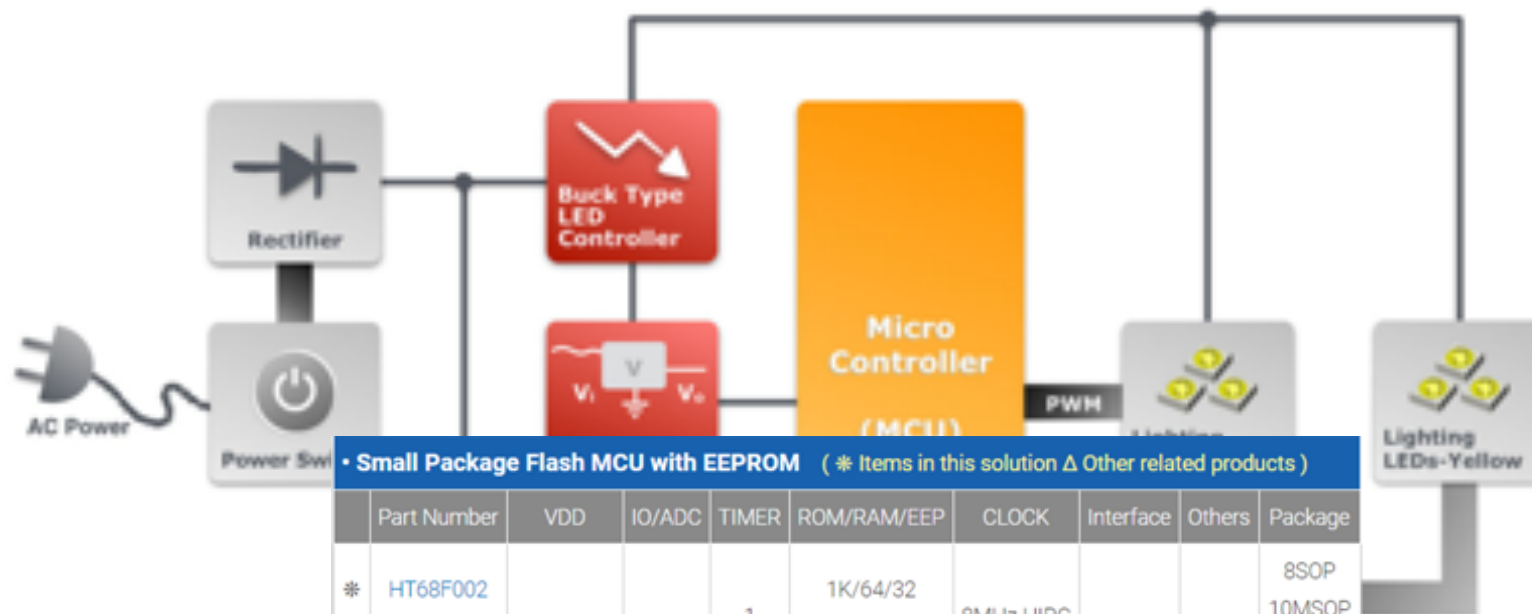


No. WAS-1758



8 bits MCU

Adjustable Colour Temperature LED Wall Switch



• Small Package Flash MCU with EEPROM (* Items in this solution Δ Other related products)

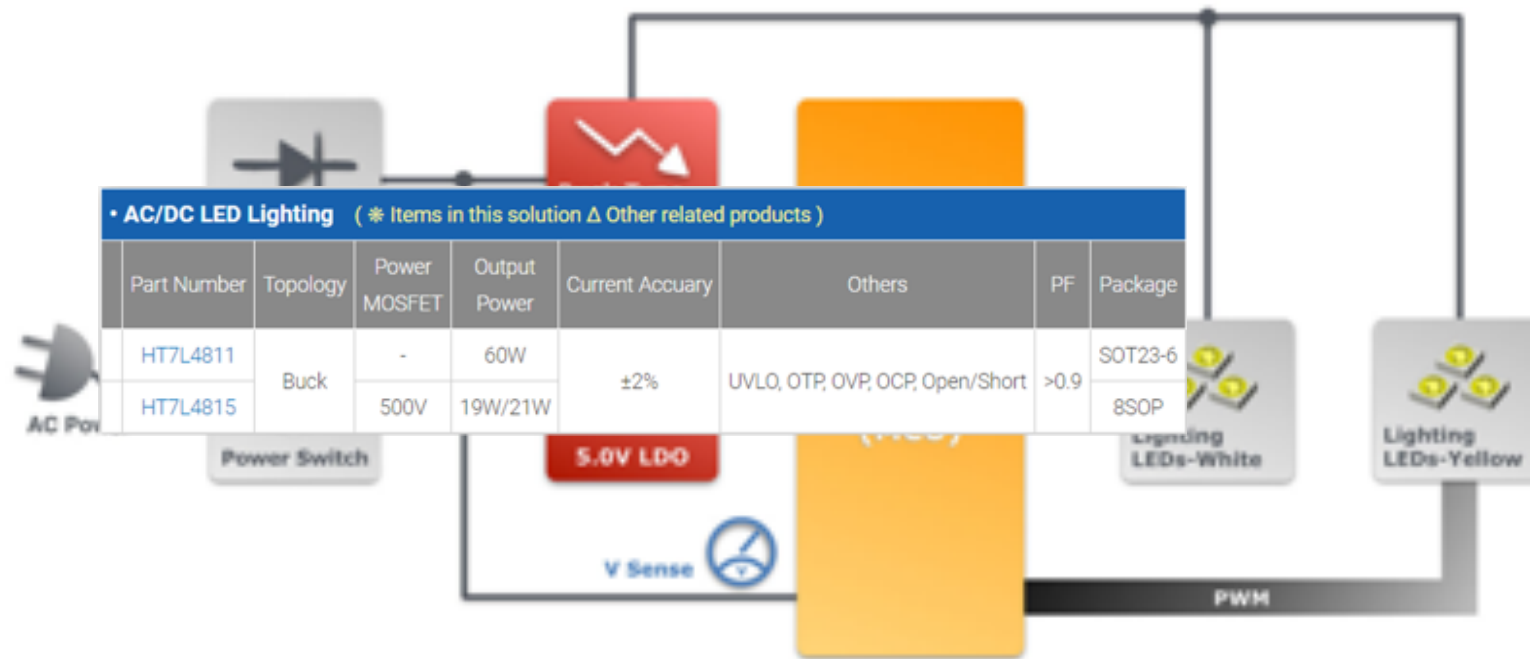
	Part Number	VDD	IO/ADC	TIMER	ROM/RAM/EEP	CLOCK	Interface	Others	Package
*	HT68F002	2.2V~5.5V	8/-	1	1K/64/32	8MHz HIRC	-	-	8SOP
	HT68F0025				2K/64/32				10MSOP
	HT68F006			2	1K/64/32	4/8/12MHz HIRC			8/10SOP

No WAS-1758

■ Wireless
■ ASIC/Memory
■ Non Holtek
■ MCU
■ Analog/Power

8 bits MCU

Adjustable Colour Temperature LED Wall Switch

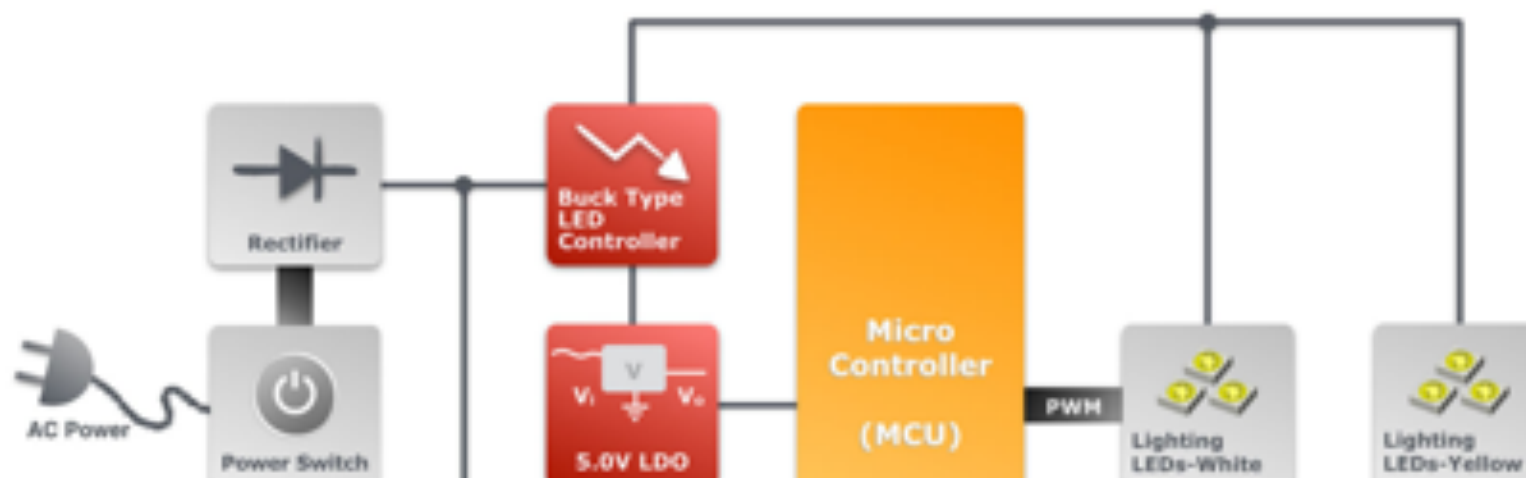


No. WAS-1758

■ Wireless ■ MCU
■ ASIC/Memory ■ Analog/Power
■ Non Holtek

8 bits MCU

Adjustable Colour Temperature LED Wall Switch



• TinyPower™ LDO (* Items in this solution Δ Other related products)

	Part Number	Maximum Input Voltage	Output Voltage	Max. Output Current	Tolerance	Current Consumption	Protections	Package
*	HT71xx-1	30V	2.1V~5.0V	30mA	±3%	2.5uA	Soft-Start	T092
	HT71xx-2				±1%			SOT23-5
	HT71xx-3				±2%	1.0uA		SOT89

No. WAS-1758

 Wireless
 ASIC/Memory
 Non Holtek

HT68F002/HT68F0025/HT68F003

Cost-Effective Flash MCU with EEPROM

Peripheral Features

- Flash Program Memory: 1Kx14 ~ 2Kx14
- RAM Data Memory: 64x8
- True EEPROM Memory: 32x8
- Watchdog Timer function
- Up to 14 bidirectional I/O lines
- One pin-shared external interrupt
- Multiple Timer Modules for time measure, compare match output, capture input, PWM output functions
- Dual Time-Base functions for generation of fixed time interrupt signals
- Low voltage reset function
- Low voltage detect function
- Multiple package types
- Flash program memory can be re-programmed up to 10,000 times
- Flash program memory data retention > 10 years
- True EEPROM data memory can be re-programmed up to 100,000 times
- True EEPROM data memory data retention > 10 years

CPU Features

- Operating Voltage
 - f_{SYS} = 8MHz: 2.2V~5.5V
- Up to 0.5us instruction cycle with 8MHz system clock at V_{DD} =5V
- Power down and wake-up functions to reduce power consumption
- Two Oscillators
 - Internal High Speed 8MHz RC oscillator – HIRC
 - Internal Low Speed 32kHz RC oscillator – LIRC
- Fully integrated internal oscillators require no external components
- Multi-mode operation: NORMAL, SLOW, IDLE and SLEEP
- All instructions executed in one or two instruction cycles
- Table read instructions
- 63 powerful instructions
- Up to 4 level subroutine nesting
- Bit manipulation instruction

8 bits MCU



32 bits MCU

32-Bit Flash MCU

8-Bit Flash MCU

High Supply Voltage Flash MCU

8-Bit OTP MCU

- ▶ Cortex-M0+ 32-Bit MCU
- ▶ Cortex-M0+ 32-Bit USB MCU
- ▶ Cortex-M0+ 32-Bit LCD MCU
- ▶ Cortex-M0+ 32-Bit 5V MCU
- ▶ Cortex-M0+ 32-Bit 5V USB MCU
- ▶ Cortex-M0+ 32-Bit Music Synthesizer MCU
- ▶ Cortex-M0+ 32-Bit Music Synthesizer MCU with Data Flash ROM
- ▶ Cortex-M0+ 32-Bit Data Bridge MCU
- ▶ Cortex-M0+ 32-Bit BLDC MCU
- ▶ Cortex-M0+ 32-Bit USB Data Logger LCD MCU
- ▶ Enhanced 24-Bit A/D Cortex-M0+ 32-Bit MCU
- ▶ Enhanced 24-Bit A/D Cortex-M0+ 32-Bit LCD MCU
- ▶ Cortex-M3 32-Bit MCU
- ▶ Cortex-M3 32-Bit Fingerprint MCU
- ▶ BLE Transparent Transmission 32-Bit MCU

32 bits MCU

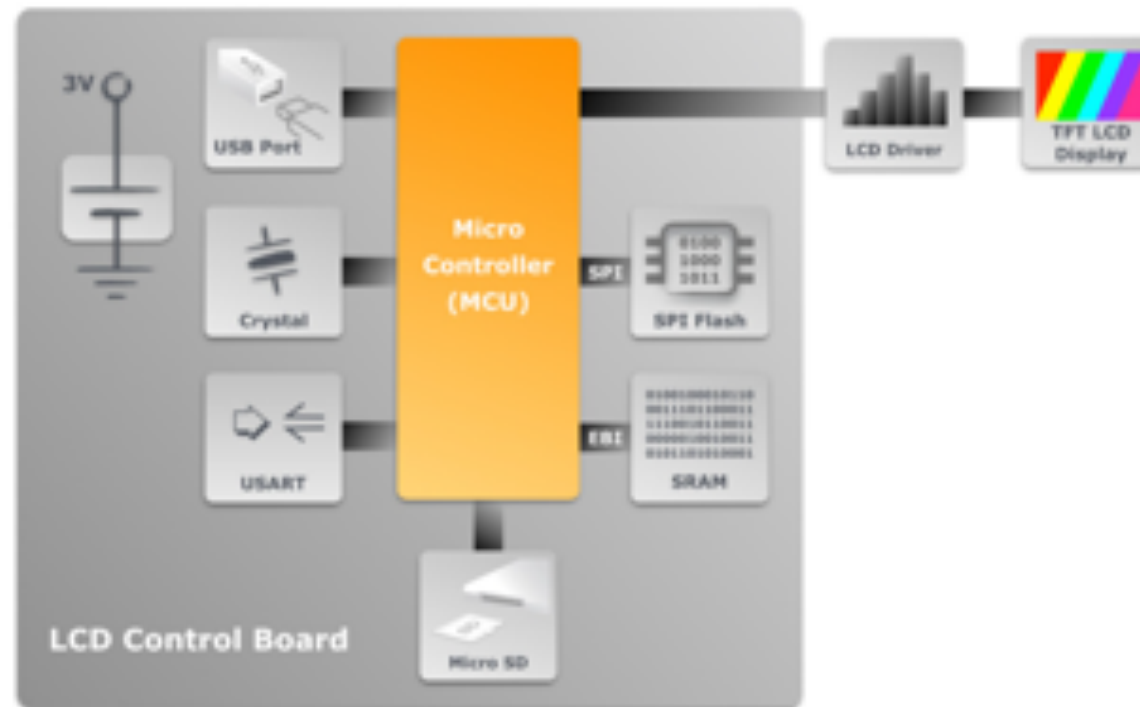
32-Bit Flash MCU																				
Cortex-M0+ 32-Bit MCU																				
Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	Timers ¹⁾	Cap. ²⁾ or PWM	Cpm. PWM ³⁾	RTC	Interface	Others	I/O	Package						
HT32F52220	40MHz	2.0V ~ 3.6V	16KB	4KB	—	1 Mbps 12-bit ×8	BFTM×1 SCTM×2 GPTM×1	6	—	—	USART×1 UART×1 SPI×1 I2C×1	—	19 23 23	24SSOP 28SSOP 33QFN						
HT32F52230		32KB	4KB																	
HT32F52231	40MHz	2.0V ~ 3.6V	32KB	4KB	—	1 Mbps 12-bit ×12	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12	3	√	USART×1 UART×2 SPI×2 I2C×2	CRC	19 23 26 40	24SSOP 28SSOP 33QFN 48LQFP						
HT32F52241		64KB	8KB																	
HT32F52243	40MHz	2.0V ~ 3.6V	64KB	8KB	6CH	1 Mbps 12-bit ×12	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12	3	√	USART×2 UART×4 SPI×2 I2C×3	CRC DIV	26 38 40 52	33QFN 46QFN 48LQFP 64LQFP						
HT32F52253		128KB	16KB																	
Cortex-M0+ 32-Bit USB MCU																				
Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	DAC	Timers ¹⁾	Cap. ²⁾ or PWM	Cpm. PWM ³⁾	RTC	SCI ⁴⁾	USB ⁵⁾	EBI ⁶⁾	I2S	Inter- face	Others	I/O	Package
HT32F52331	48MHz	2.0V ~ 3.6V	32KB	4KB	—	1 Mbps 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 Mbps 12-bit ×12	2	—	BFTM×2 SCTM×2 GPTM×2 MCTM×1	14	3	√	2	√	√	√	USART×2 UART×2 SPI×2 I2C×2	CRC	26 39 51	33QFN 48LQFP 64LQFP
HT32F52352		128KB	16KB																	
HT32F52344	60MHz	1.65V ~ 3.6V	64KB	8KB	6CH	1 Mbps 12-bit ×12	2	—	BFTM×2 SCTM×2 GPTM×1 MCTM×1	10	3	√	—	√	√	—	UART×2 SPI×2 I2C×1	CRC DIV	26 38 40 54	33QFN 46QFN 48LQFP 64LQFP
HT32F52354		128KB	8KB																	
HT32F52357	60MHz	1.65V ~ 3.6V	128KB	16KB	6CH	1 Mbps 12-bit ×12	2	500Kaps 12-bit×2	BFTM×2 SCTM×2 PWM×2 GPTM×1 MCTM×1	18	3	√	2	√	√	√	USART×2 UART×4 SPI×2 QSPI×1 I2C×2	AES CRC DIV	37 39 53 67	46QFN 48LQFP 64LQFP 80LQFP
HT32F52367		256KB	32KB																	

32 bits MCU

32-Bit Flash MCU																			
Cortex-M3 32-Bit MCU																			
Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timers ¹	Cap. ^{1,2} or PWM	Cpm. PWM ³	RTC	SCI ⁴	USB ⁵	EBI ⁶	I ⁷ S	Inter- face	Others	I/O	Package
HT32F12345	96MHz	2.0V ~ 3.6V	64KB	16KB	12CH	1 Msp 12-bit ×12	2	BFTM×2 GPTM×2 MCTM×2	16	6	✓	—	✓	✓	✓	SDIO×1 USART×2 UART×2 SPI×2 I ² C×2	CRC	37 37 51	48QFN 48LQFP 64LQFP
HT32F12365	96MHz	2.0V ~ 3.6V	256KB	64KB	12CH	1 Msp 12-bit ×16	2	BFTM×2 GPTM×2 MCTM×2	16	6	✓	2	✓	✓	✓	SDIO×1 USART×2 UART×2 SPI×2 I ² C×2	AES CRC	37 37 51 80	48QFN 48LQFP 64LQFP 100LQFP
HT32F12366			256KB	128KB															
HT32F12364	72MHz	1.65V ~ 3.6V	256KB	128KB	6CH	1 Msp 12-bit ×8	—	BFTM×2 SCTM×2 PWM×1 GPTM×1	10	—	✓	1	✓	✓	—	USART×1 UART×2 SPI×2 I ² C×2	AES CRC	32 38 52	40QFN 48LQFP 64LQFP
Cortex-M3 32-Bit Fingerprint MCU																			
Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timers ¹	Cap. ^{1,2} or PWM	Cpm. PWM ³	RTC	SCI ⁴	USB ⁵	EBI ⁶	CSIF ⁷	Inter- face	Others	I/O	Package
HT32F22366	96MHz	2.0V ~ 3.6V	256KB	128KB	12CH	1 Msp 12-bit ×16	2	BFTM×2 GPTM×2 MCTM×2	16	6	✓	2	✓	✓	✓	SDIO×1 USART×2 UART×2 SPI×2 I ² C×2 I ² S×1	AES CRC	37 37 51 80	48QFN 48LQFP 64LQFP 100LQFP

32 bits MCU

Colour Screen Applications



No. WAS-1632



32 bits MCU

Colour Screen Applications



• Cortex-M3 32-Bit Standard MCU (* Items in this solution Δ Other related products)

Part Number	VDD	Max. Freq.	ROM /SRAM	PDMA	ADC	CMP	Timer	Cap. or PWM Cpm. PWM	Interface	Others	I/O	PACKAGE
HT32F1653	2.7V ~ 3.6V	72MHz	32KB /8KB	8CH	1Msp/s	2	6	16 6	USB, SPI, UART, USART, PC, SCI, PS	EBI, CRC, RTC	37/51	48/64 LQFP
HT32F1654			64KB /16KB		12bitx12							
HT32F1655			128KB /32KB		1Msp/s						35/49/80	48/64/100 LQFP
* HT32F1656			256KB /32KB		12bitx16							

• Cortex-M0+ 32-Bit Standard MCU (* Items in this solution Δ Other related products)

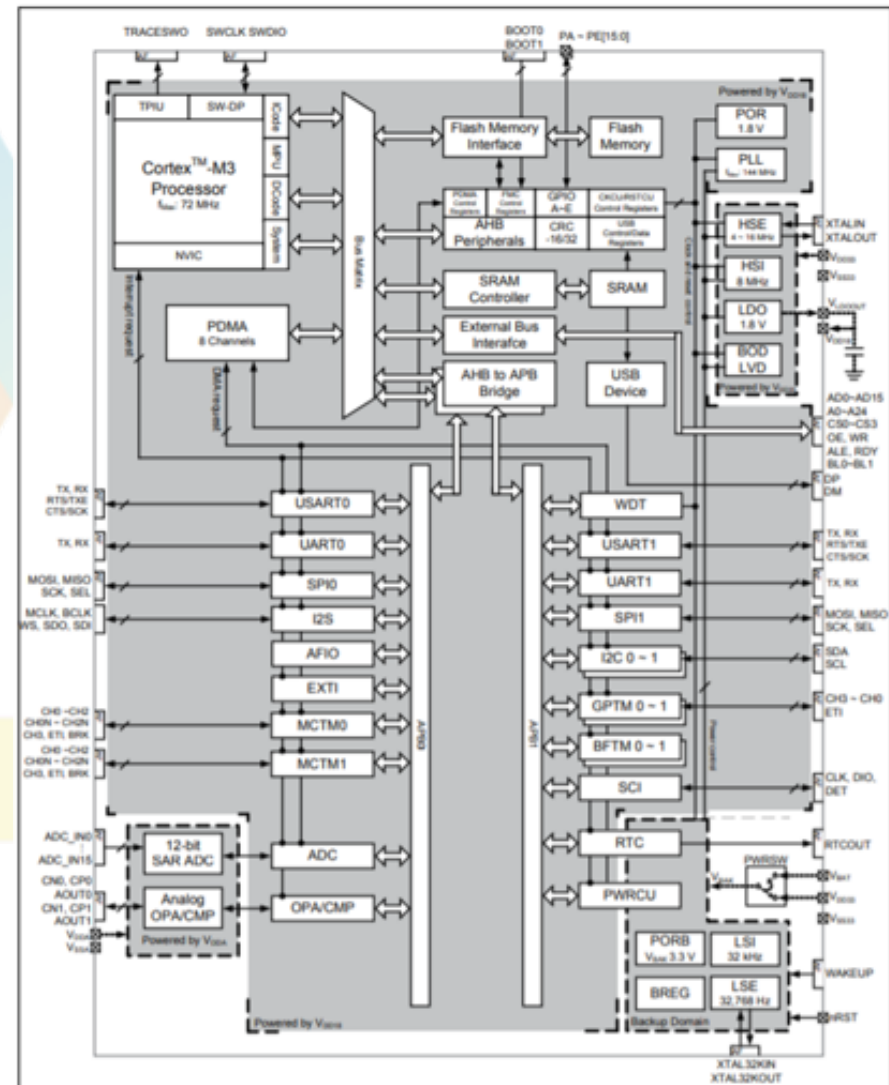
HT32F52342	2.0V ~ 3.6V	48MHz	64KB /8KB	6CH	1Msp/s	2	7	14 3	USB, SPI, UART, USART, PC, SCI, PS	EBI, CRC, RTC	39/51	48/64 LQFP
HT32F52352			128KB /16KB		12bitx12							

No. WAS-1632



32 bits MCU

- ARM Cortex M3
- 72 MHz
- 256KB Flash Memory, 32KB SRAM
- ADC, I2C, USART, UART, SPI, I2S, PDMA, GPTM, MCTM, SCI, EBI, CRC16/32, USB2.0 FS, SW-DP (Serial Wire Debug Port), etc
- Aplicación control electrodomésticos, sistemas de alarma, productos de consumo, control de motores, etc...





Battery Management	Li Battery & Power Management	AC Power Management	Inverter Flash MCU	LDO & Detector	◀	▶
▶ Power Bank Flash MCU						
▶ Advanced Power Bank Flash MCU						
▶ Battery Charger Flash MCU						
▶ Wireless Charger Tx Flash MCU						
▶ Wireless Charger Rx Flash MCU						
▶ Wireless Charger Tx Power Stage IC						
▶ <u>Handheld Product Flash MCU</u>						

Battery Management

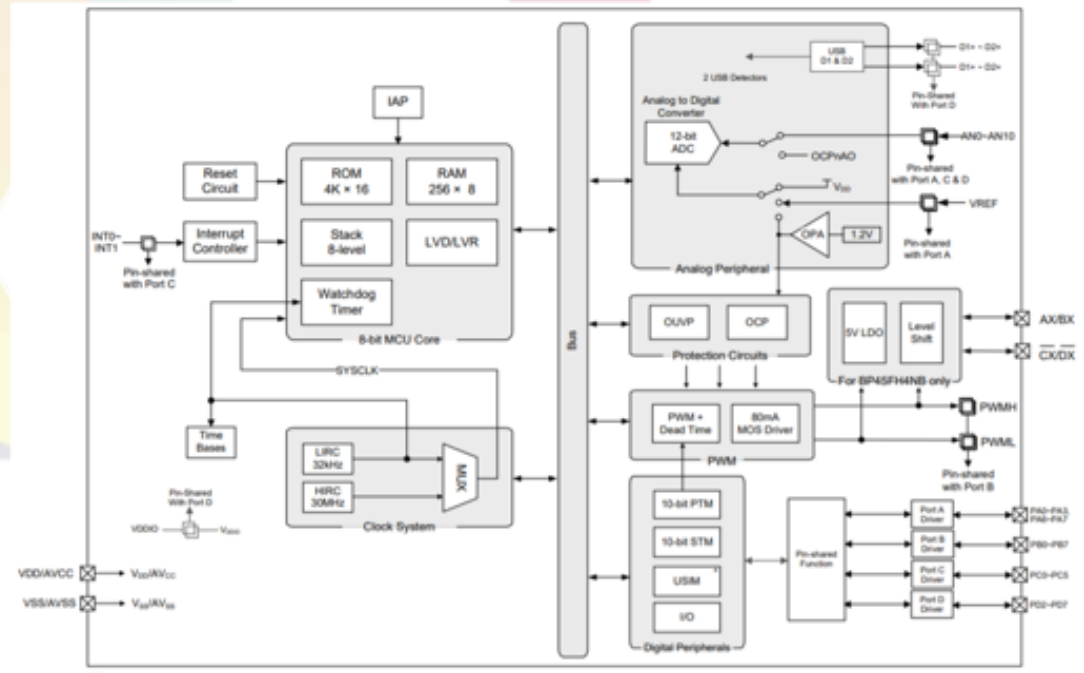
Power Bank Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Protections	LDO	HVO	VREF	Q.C 2.0	Package
HT45F4MA	30MHz	—	2.55V~5.5V	470kHz~15MHz or 32kHz	2K×16	128×8	64×8	4	16	10-bit PTM×1 16-bit STM×1	12-bit ×8	OVP×1 OCP×1	—	—	—	—	16NSOP 20SSOP
HT45FH4MA-1		3V~28V							13				5V	2			20SSOP
BP45F4MB	30MHz	—	2.5V~5.5V	470kHz~15MHz or 32kHz	2K×16	128×8	—	4	18	10-bit PTM×1 16-bit STM×1	12-bit ×7	OVP×1 OCP×1	—	—	2.4V ±1%	—	16NSOP 20SSOP
HT45F4N	30MHz	—	2.55V~5.5V	470kHz~15MHz or 32kHz	4K×16	192×8	64×8	8	26	10-bit PTM×3 16-bit STM×1	12-bit ×13	OCP×2 OUVP×1	—	—	—	—	28SSOP
HT45FH4N		3V~28V							21				5V	2			
BP45F4NB	30MHz	—	2.6V~5.5V	470kHz~15MHz or 32kHz	4K×16	256×8	—	8	26	10-bit CTM×2 16-bit PTM×1	12-bit ×11	OCP×2 OUVP×1	—	—	2.4V ±1%	—	24/28SSOP 28QFN
BP45FH4NB		3V~28V							21				5V	2			28SSOP

Advanced Power Bank Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Auto-adjust H.R. PWM	Protections	LDO	HVO	VREF	Q.C 2.0	Package
HT45F5N	8MHz	—	2.55V~5.5V	4K×16	256×8	64×8	8	30	10-bit PTM×1 16-bit STM×1	12-bit ×14	2	OCP×2 OUVP×2	—	—	2.4V ±1%	—	28SSOP 32QFN
HT45FH5N		3V~28V						28					5V	2		√	28SSOP 48QFN
BP45FH5N	8MHz 12MHz 16MHz	3V~15V	2.55V~5.5V	6K×16	256×8	64×8	8	28	10-bit PTM×1 16-bit STM×1	12-bit ×14	2	OCP×2 OUVP×2	5V	8	2V/3V/4V ±1%	√	48QFN

- ❑ Flash MCUs dedicadas para Power Banks
- ❑ Implementa operaciones de administración de carga y descarga de baterías con la unidad interna PWM
- ❑ I²C, SPI y UART
- ❑ Protección Sobretensiones y Subtensiones
- ❑ Protección Sobrecorriente
- ❑ ADC con divisor de voltaje interno para monitorizar voltajes





BLE	2.4GHz RF	Sub-1GHz RF	NFC	Infrared / Encoder / Decoder	FRS	RF Module	Transparent Transmissi	◀	▶
▶ BLE Transparent Transmission 32-Bit MCU									
▶ BLE Transparent Transmission									
▶ BLE Beacon Transmitter									
▶ BLE Beacon 24-Bit A/D Flash MCU									
▶ BLE Beacon Body Fat Measurement A/D Flash MCU									

BLE

BLE Transparent Transmission

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

BLE Beacon Transmitter

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

BLE Beacon 24-Bit A/D Flash MCU

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

BLE Beacon Body Fat Measurement A/D Flash MCU

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

2.4GHz RF

2.4GHz RF Transceiver A/D Flash MCU

Part No.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	RTC	LVR/ LVD	Built-in 2.4GHz RF Block	Comp- arator	Interface	Package	
BC66F840	2.2V~3.6V	4K×16	256×8	128×8	8	21	16-bit CTM×1 16-bit STM×1 16-bit ETM×1	12-bit×8	√	√	√	1	SPI/I ² C×1 SPI×1	32QFN	
Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Frequency	Data Rate	Output Power	Sensitivity	Interface	Package
BC66F5652	1.9V~3.6V	400kHz~16MHz or 32kHz	8K×16	512×8	128×8	8	22	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×12	2402~2480 MHz	125/250/ 500Kbps	-10~+6 dBm	-97dBm @ 250Kbps	SPI/I ² C×1 UART×1	48QFN
BC66F5662			16K×16	2048×8	1024×8	16	24	10-bit PTM×2 16-bit STM×3	12-bit ×4						

2.4GHz RF Transceiver

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

2.4GHz RF Transmitter with Encoder A/D Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Frequency	Modulation	Data Rate	Output Power	Package
BC66F5132	2.0V~3.6V	8MHz or 32kHz	2K×14	64×8	32×14 [†]	4	12	8-bit×1	10-bit×4	2402~2480MHz	GFSK	125/250/500 Kbps	-10~+6dBm	24SSOP-EP

Note: † Emulated EEPROM.

2.4GHz RF Transmitter with Encoder

Part No.	VDD	Frequency	Modulation	Data Rate	Output Power	Oscillator	Key Mode	Interface	Package
BC5161	2.0V~3.6V	2402~2480MHz	GFSK	125/250/500Kbps	-10~+6dBm	32MHz	✓	—	8SOP-EP, 16QFN
BC5162							—	FC	8SOP-EP

Sub-1GHz RF

Sub-1GHz RF Transceiver A/D Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Band	Data Rate	Max. Output Power	Rx Current Consumption	Package
BC66F3652	1.9V~3.6V	400kHz~16MHz or 32kHz	8K×16	512×8	128×8	8	22	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×12	315/433/470/ 868/915MHz	2~250 Kbps	13dBm	4.2mA@433MHz 5.5mA@868MHz	46QFN
BC66F3662	1.9V~3.6V	400kHz~16MHz or 32kHz	16K×16	2048×8	1024×8	16	22	10-bit PTM×2 16-bit STM×2	12-bit ×4	315/433/470/ 868/915MHz	2~250 Kbps	13dBm	4.2mA@433MHz 5.5mA@868MHz	46QFN

Sub-1GHz RF Transceiver

Part No.	VDD	Band	FSK/GFSK	Low Current	External Inductor	Data Rate	Max. Output Power	Sensitivity	Package
BC3601	2.0V~3.6V	315/433/470/868/915MHz	√	—	—	2~250Kbps	17dBm	-121dBm@2Kbps	24QFN
BC3602	1.9V~3.6V	315/433/470/868/915MHz	√	√	√	2~250Kbps	13dBm	-120dBm@2Kbps	24QFN

NFC

A/D NFC TAG Flash MCU

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

NFC Reader

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

Hopping Code Remote Controller



No WAS-2052

- | | |
|---|--|
|  Wireless |  MCU |
|  ASRC/Memory |  Analog/Power |
|  Non Holtek | |



Hopping Code Remote Controller



Transmisor de RF sub-1GHz Flash MCU (* Elementos en esta solución Δ Otros productos relacionados)

	Número de pieza	VDD	IO	TEMPORIZADOR	ROM / RAM / EEP	RELOJ	Banda	Velocidad de símbolo	Potencia de salida	Otros	Paquete
*	BC68F2130	2,0 V ~ 3,6 V	8	2	2KW / 256B / -	HIRC de 16 MHz	315/433/868/915 MHz	0.5 ~ 25 Ksps (OK)	0/10/13 dBm	OOK / FSK, LVD / LVR, IAP	16 NSOP-EP / QFN
	BC68F2140		14		4KW / 256B / -						24 SSOP-EP / QFN
	BC68F2150				8KW / 256B / -						

ASRC/Memory
Analog/Power
Non Holtek

Hopping Code Remote Controller



SSub-1GHz OOK Rx (* Elementos de esta solución Δ Otros productos relacionados)

	Número de pieza	VDD	IO / ADC	TEMPORIZADOR	ROM / RAM / EEP	RELOJ	Interfaz	Otros	Paquete
*	HT66F2370	2,2 V ~ 5,5 V	58/12 bits × 16	7	32KW / 3KB / 512B	HIRC de 8/12/16 MHz	SPI / I ² C, SPIA, UART	SCOM, CRC, comparador	48/64 LQFP
	HT66F2372	1,8 V ~ 5,5 V	44/12 bits × 16		32KW / 3KB / 1KB				28 SOP 44/48 LQFP

No WAS-2052



Hopping Code Remote Controller



SSub-1GHz OOK Rx (* Elementos de esta solución Δ Otros productos relacionados)

	Número de pieza	VDD	Banda	Velocidad de símbolo	Consumo actual	Sensibilidad	Otro	Paquete
*	BC2302A	2,5 V ~ 5,5 V	315/433 MHz	20Ksps	3,2 mA a 433 MHz	-112dBm a 10 kps	OK	8SOP-EP
	BC2302B		315/433/868/915 MHz	(máx.)	4.0mA @ 868MHz		OK	8SOP-EP

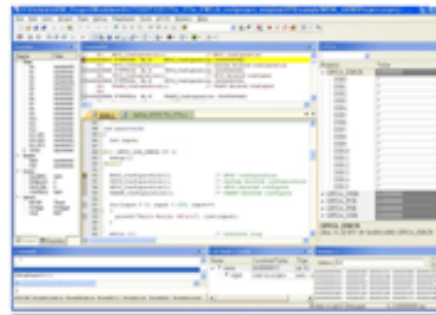
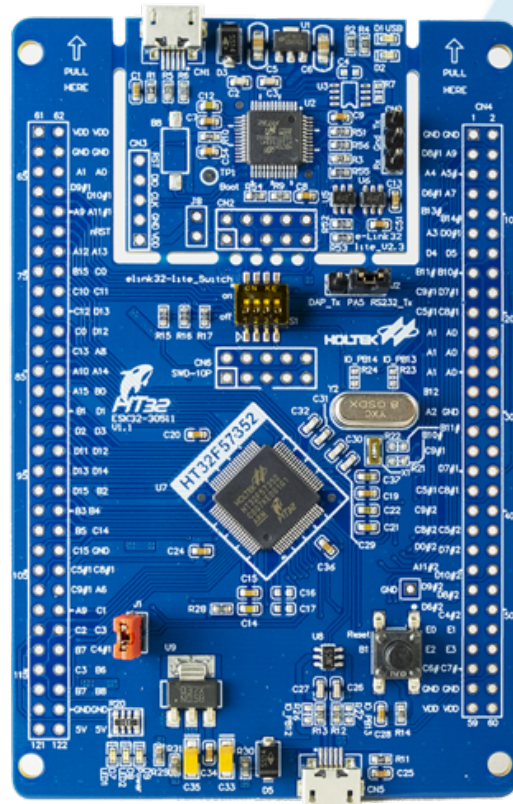
No WAS-2052





MCU Developer Platform, Dev Kits,
IDE's, Programadores, Soporte

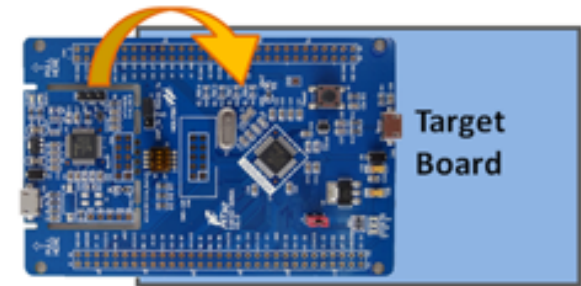
? Kits de desarrollo:



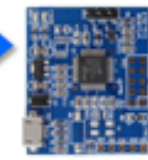
KEIL
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IAR
SYSTEMS

Evaluate



Develop



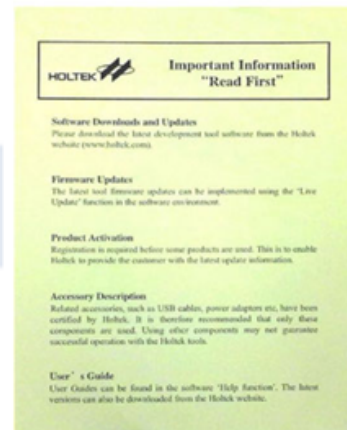
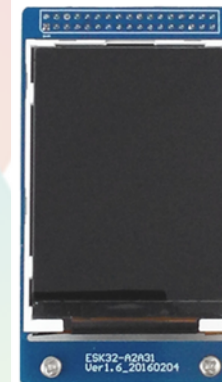
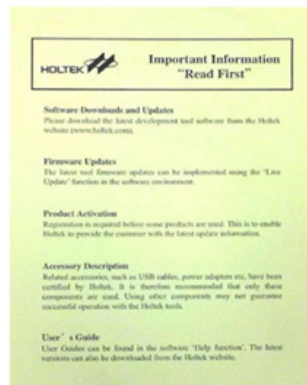
Debugger

SWD

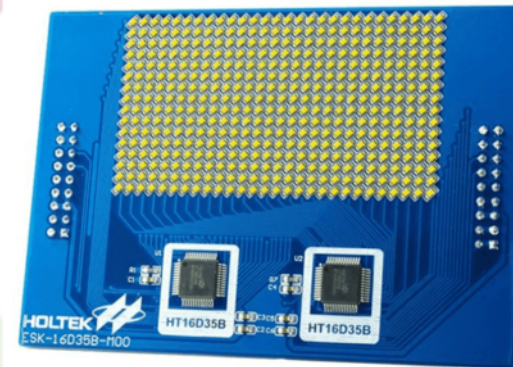
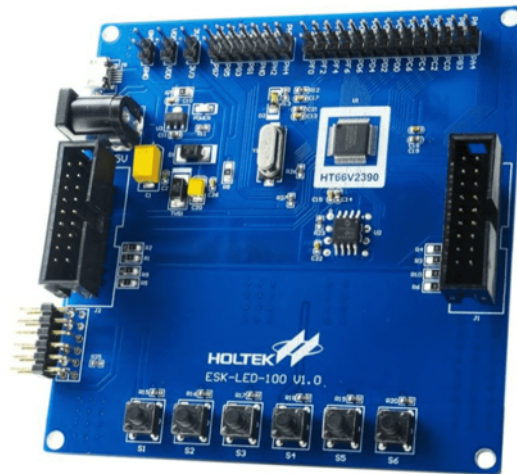


Any Board with a
SWD-10P Connector

? Kits de desarrollo:



❓ Kits de desarrollo:





? Herramientas de desarrollo (programadores):





Muchas gracias