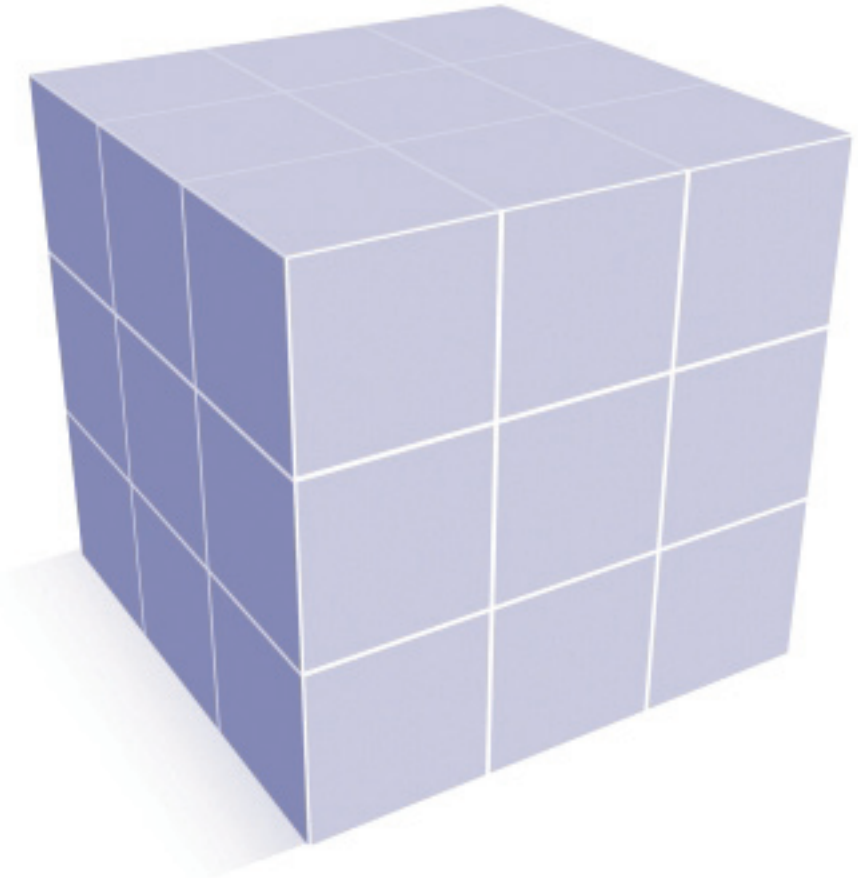
Selection Guide



盛群半導體股份有限公司
HOLTEK SEMICONDUCTOR INC.

www.holtek.com

Introduction

From the establishment of the company in 1983 to the present date, Holtek Semiconductor has witnessed continual steady growth, during which time a wide range of microcontrollers and peripheral semiconductor devices have been released onto the market. An accumulation of an extensive number of intellectual properties and the ability to build up an excellent skill base in its highly qualified engineering design teams, have given Holtek the means to be extremely successful in providing its customers with a wide range of high quality industrial grade semiconductor devices. In responding to the needs of global electronic development trends, Holtek′s range of mature and high quality semiconductor devices can now be found in many of today′s consumer appliances and industrial products.

Product Device Range

Holtek′s product range remain firmly focused on microcontrollers and their peripheral products and central to every Holtek microcontroller is a high performance 8-bit RISC core. Holtek′s microcontroller range includes a vast range of fully integrated digital and analog functions such as A/D converters, LCD drivers, PWM generators, high current LED drivers, SPI interfaces, USB drivers etc. In meeting full industry specifications with their wide voltage and temperature operating range and being provided in Mask, OTP and Flash type versions, Holtek′s customers are assured of having an extensive range of high quality, flexible devices with an outstanding price/function ratio for all their application needs.

Product Development Strategy

Holtek′s commitment to new product development and innovation can be seen in its continual release of an extensive range of devices. With its years of development experience in the microcontroller area, Holtek is naturally proud of its constantly expanding array of industrial quality MCU devices, fully supported and complemented by a comprehensive range of hardware and software development tools. To accompany its Microcontroller device range, Holtek continues to develop and release other peripheral devices in the communication, remote control, computer peripheral, memory, power management and other product areas. Sustained commitment and substantial investment in future device development will see a continuation of this trend as Holtek further enhances the functionality and flexibility of all its product range. As its design strategy remains focused in the developing automotive, industrial and consumer product areas, the company, with its concentration of design effort in the high quality MCU device area, will see an expansion of its international market presence. 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 main business area, in addition to research and development, includes a strong marketing focus giving the company a presence in most parts of the world where there exists a large number of sales offices and agents. This global marketing and promotional structure will continue to see future expansion and place Holtek in a strong position to take advantage of any new market opportunities which may arise.

8-Bit MCU

Cost-Effective I/O Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	Interrupt		PFD	Stack	Package
							Ext.	Int.			
HT48R062 HT48C062	2.2V~5.5V	400kHz~8MHz	1K×14	32×8	11	—	—	—	—	1	16DIP/NSOP
HT48R05A-1 HT48C05	2.2V~5.5V	400kHz~8MHz	0.5K×14	32×8	13	1	1	1	√	2	16NSOP/SSOP, 18DIP/SOP
HT48R06A-1 HT48C06	2.2V~5.5V	400kHz~8MHz	1K×14	64×8	13	1	1	1	√	2	16NSOP/SSOP, 18DIP/SOP
HT48R07A-1					19						24SKDIP/SOP/SSOP
HT48R08A-1	2.2V~5.5V	400kHz~8MHz	2K×14	96×8	13	1	1	1	√	2	16NSOP/SSOP, 18DIP/SOP
HT48R09A-1					19						24SKDIP/SOP/SSOP
HT48R0AA-1	2.2V~5.5V	400kHz~8MHz	4K×15	128×8	23	2	1	2	√	4	24/28SKDIP/SOP

Note: Part numbers including "C" are mask version devices while "R" are OTP devices.

I/O Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer			Interrupt		PFD	UART	Stack	Package
						8-bit	16-bit	RTC	Ext.	Int.				
HT48R10A-1 HT48C10-1	2.2V~5.5V	400kHz~8MHz	1K×14	64×8	21	1	—	√	1	1	√	—	4	24SKDIP/SOP
HT48R30A-1 HT48C30-1	2.2V~5.5V	400kHz~8MHz	2K×14	96×8	25	1	—	√	1	1	√	—	4	24SKDIP/SOP, 28SKDIP/SOP
HT48R50A-1 HT48C50-1	2.2V~5.5V	400kHz~8MHz	4K×15	160×8	35	1	1	√	1	2	√	—	6	28SKDIP/SOP, 48SSOP
HT48R502	2.2V~5.5V	400kHz~8MHz	4K×15	224×8	56	—	2	√	1	2	√	—	16	48SSOP, 64LQFP
HT48R70A-1 HT48C70-1	2.2V~5.5V	400kHz~8MHz	8K×16	224×8	56	—	2	√	1	2	√	—	16	48SSOP, 64LQFP
HT48RU80 HT48CU80	2.2V~5.5V	400kHz~8MHz	16K×16	576×8	56	1	2	√	2	4	√	√	16	48SSOP, 64LQFP

Note: 1. Part numbers including "C" are mask version devices while "R" are OTP devices.
2. The RTC is available when the internal RC oscillator is selected as the system clock.

Small Package I/O Type MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	Interrupt		PFD	Stack	Package
								Ext.	Int.			
HT48R01A1 HT48R01A2 HT48R01A3	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~12MHz	1K×14	64×8	8	1	1	1	√	4	10MSOP
HT48R02-1 HT48R02-2 HT48R02-3	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~12MHz	2K×14	96×8	8	2	1	2	√	6	10MSOP
HT48R03-1 HT48R03-2 HT48R03-3	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~12MHz	4K×15	160×8	8	2	1	2	√	8	10MSOP

Note: 1. These devices are only available in OTP versions.
2. The internal clock in the table is a fully integrated RC oscillator requiring no external components which can be used as the system clock.

I/O Type MCU with 16×16 High Current LED Driver

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		LED Driver Output	PFD	Stack	Package
						8-bit	RTC	Ext.	Int.				
HT48R52A	2.2V~5.5V	400kHz~8MHz or 32768Hz	2K×14	88×8	8	1	√	1	1	16×16	—	4	44/52QFP
HT48R54A	2.2V~5.5V	400kHz~8MHz or 32768Hz	4K×15	192×8	8	2	√	1	2	16×16	√	6	44/52QFP

Note: 1. These devices are only available in OTP versions.
2. The RTC can be used as the system clock giving a typical operating current of 20μA at 3V.
3. The standby current is 1μA at 3V with the RTC still running.

I/O Flash Type MCU with EEPROM

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer		Interrupt		PFD	Stack	Package
							8-bit	16-bit	Ext.	Int.			
HT48F06E	2.2V~5.5V	400kHz~ 12MHz	1K×14	64×8	128×8	13	1	—	1	1	√	2	16NSOP, 18DIP/SOP, 20SSOP
HT48F10E	2.2V~5.5V	400kHz~ 12MHz	1K×14	64×8	128×8	19	1	—	1	1	√	4	24SKDIP/SOP/SSOP
HT48F30E	2.2V~5.5V	400kHz~ 12MHz	2K×14	96×8	128×8	23	1	—	1	1	√	4	24SKDIP/SOP/SSOP, 28SKDIP/SOP/SSOP
HT48F50E	2.2V~5.5V	400kHz~ 12MHz	4K×15	160×8	256×8	33	1	1	1	2	√	6	28SKDIP/SOP/SSOP, 48SSOP
HT48F70E	2.2V~5.5V	400kHz~ 12MHz	8K×16	224×8	256×8	56	—	2	1	2	√	16	48SSOP, 64LQFP

8-Bit MCU

LCD Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Timer			Interrupt		PFD	UART	Stack	Package
							8-bit	16-bit	RTC	Ext.	Int.				
HT49R10A-1 HT49C10-1	2.2V~ 5.5V	400kHz~8MHz or 32768Hz	1K×14	64×8	10	14×4 or 15×3	1	—	√	1	3	√	—	2	44QFP
HT49R30A-1 HT49C30-1	2.2V~ 5.5V	400kHz~8MHz or 32768Hz	2K×14	96×8	14	18×4 or 19×3	1	—	√	2	3	√	—	4	48SSOP
HT49C30L	1.2V~ 2.2V	400kHz~500kHz or 32768Hz													
HT49R50A-1 HT49C50-1	2.2V~ 5.5V	400kHz~8MHz or 32768Hz	4K×15	160×8	20	32×4 or 33×3	2	—	√	2	4	√	—	6	48SSOP, 100QFP
HT49C50L	1.2V~ 2.2V	400kHz~500kHz or 32768Hz													
HT49R70A-1 HT49C70-1	2.2V~ 5.5V	400kHz~8MHz or 32768Hz	8K×16	224×8	24	40×4 or 41×3	1	1	√	2	4	√	—	16	100QFP
HT49C70L	1.2V~ 2.2V	400kHz~500kHz or 32768Hz													
HT49RU80 HT49CU80	2.2V~ 5.5V	400kHz~8MHz or 32768Hz	16K×16	576×8	31	47×4 or 48×3	1	2	√	2	6	√	√	16	100QFP

Note: 1. Part numbers including "C" are mask version devices, "R" are OTP devices, while part numbers suffixed with "L" are low voltage mask version devices.
2. For the low voltage mask version devices, note that the HT49R30A-1, HT49R50A-1 and HT49R70A-1 devices can be used as corresponding OTP devices.

Cost-Effective A/D Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory		I/O	8-bit Timer	Interrupt		A/D	PWM	PFD	Stack	Package
				SRAM	EEPROM			Ext.	Int.					
HT46R46 HT46C46	2.2V~ 5.5V	400kHz~ 8MHz	1K×14	64×8	—	13	1	1	2	8-bit×4	8-bit×1	√	4	16NSOP, 18DIP/SOP, 20SSOP
HT46R47 HT46C47	2.2V~ 5.5V	400kHz~ 8MHz	2K×14	64×8	—	13	1	1	2	9-bit×4	8-bit×1	√	6	16NSOP, 18DIP/SOP, 20SSOP
HT46R48A HT46C48A				88×8		19								20DIP/SOP, 24SKDIP/SOP, 24SSOP
HT46R49	2.2V~ 5.5V	400kHz~ 8MHz	4K×15	128×8	—	23	1	1	2	9-bit×4	8-bit×2	√	6	20DIP/SOP, 24/28SKDIP/SOP
HT46R4A	2.2V~ 5.5V	400kHz~ 8MHz	4K×15	192×8	—	27	2	1	3	9-bit×6	8-bit×2	√	6	28SKDIP/SOP, 44QFP
HT46R46E HT46C46E	2.2V~ 5.5V	400kHz~ 8MHz	1K×14	64×8	128×8	13	1	1	2	8-bit×4	8-bit×1	√	4	18DIP/SOP
HT46R47E HT46C47E	2.2V~ 5.5V	400kHz~ 8MHz	2K×14	64×8	128×8	13	1	1	2	9-bit×4	8-bit×1	√	6	18DIP/SOP
HT46R48AE HT46C48AE				88×8		19								24SKDIP/SOP
HT46R49E	2.2V~ 5.5V	400kHz~ 8MHz	4K×15	128×8	128×8	23	1	1	2	9-bit×4	8-bit×2	√	6	24/28SKDIP/SOP
HT46R4AE	2.2V~ 5.5V	400kHz~ 8MHz	4K×15	192×8	128×8	27	2	1	3	9-bit×6	8-bit×2	√	6	28SKDIP/SOP, 44QFP

Note: 1. Part numbers including "C" are mask version devices while "R" are OTP devices.
2. Part numbers including an "E" suffix contain EEPROM Data Memory.

A/D Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		I²C	A/D	PWM	PFD	UART	Stack	Package
						8-bit	16-bit	Ext.	Int.							
HT46R22 HT46C22	2.2V~ 5.5V	400kHz~ 8MHz	2K×14	64×8	19	1	—	1	3	√	9-bit×8	8-bit×1	√	—	6	24SKDIP/SOP
HT46R23 HT46C23	2.2V~ 5.5V	400kHz~ 8MHz	4K×15	192×8	23	—	1	1	3	√	10-bit×8	8-bit×2	√	—	8	24SKDIP/SOP, 28SKDIP/SOP
HT46R232 HT46C232	2.2V~ 5.5V	400kHz~ 8MHz	4K×16	192×8	40	—	2	1	4	√	10-bit×8	8-bit×4	√	—	8	28SKDIP/SOP, 48SSOP
HT46R24 HT46C24	2.2V~ 5.5V	400kHz~ 8MHz	8K×16	384×8	40	—	2	1	4	√	10-bit×8	8-bit×4	√	—	16	28SKDIP/SOP, 48SSOP
HT46RU25 HT46CU25	2.2V~ 5.5V	400kHz~ 8MHz	16K×16	576×8	48	1	2	1	5	√	12-bit×8	8-bit×4	√	√	16	48/56SSOP
HT46RU26 HT46CU26*	2.2V~ 5.5V	400kHz~ 8MHz	32K×16	768×8	48	1	2	1	5	√	12-bit×8	8-bit×4	√	√	16	48/56SSOP

* Under development, available in 3Q, 2008.

Note: Part numbers including "C" are mask version devices while "R" are OTP devices.

8-Bit MCU

A/D Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	Interrupt		A/D	PWM	PFD	Stack	Package
							Ext.	Int.					
HT46R46-H	3.3V~5.5V	400kHz~8MHz	1K×14	64×8	13	1	1	2	8-bit×4	8-bit×1	√	4	18DIP/SOP
HT46R47-H	3.3V~5.5V	400kHz~8MHz	2K×14	64×8	13	1	1	2	9-bit×4	8-bit×1	√	6	18DIP/SOP

Note: 1. These devices are only available in OTP versions.
2. Operating Temperature –40°C ~ 125°C

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	Interrupt		A/D	PWM	PFD	Stack	Package
							Ext.	Int.					
HT46R51A	2.2V~5.5V	400kHz~8MHz	1K×15	96×8	14	1	1	2	12-bit×5	8-bit×1	√	6	16NSOP, 18DIP, 20SOP/SSOP
HT46R52A	2.2V~5.5V	400kHz~8MHz	2K×15	128×8	14	1	1	2	12-bit×5	8-bit×1	√	6	16NSOP, 18DIP, 20SOP/SSOP
HT46R53A	2.2V~5.5V	400kHz~8MHz	2K×15	192×8	22	1	1	2	12-bit×8	8-bit×1	√	6	28SKDIP/SOP
HT46R54A	2.2V~5.5V	400kHz~8MHz	4K×15	208×8	22	1	1	2	12-bit×8	8-bit×1	√	6	28SKDIP/SOP

Note: These devices are only available in OTP versions.

Small Package A/D Type MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	Interrupt		A/D	PWM	PFD	Stack	Package
								Ext.	Int.					
HT46R01A1 HT46R01A2 HT46R01A3	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~12MHz	1K×14	64×8	8	1	1	2	8-bit×4	8-bit×1	√	4	10MSOP
HT46R02-1 HT46R02-2 HT46R02-3	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~12MHz	2K×14	96×8	8	2	1	3	9-bit×4	8-bit×1	√	6	10MSOP
HT46R03-1 HT46R03-2 HT46R03-3	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~12MHz	4K×15	160×8	8	2	1	3	12-bit×4	8-bit×1	√	8	10MSOP

Note: 1. These devices are only available in OTP versions.
2. The internal clock in the table is a fully integrated RC oscillator requiring no external components which can be used as the system clock.

A/D Type MCU with 16×16 High Current LED Driver

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		LED Driver Output	A/D	PWM	PFD	Stack	Package
						8-bit	RTC	Ext.	Int.						
HT46R92	2.2V~5.5V	400kHz~8MHz or 32768Hz	2K×14	88×8	8	1	√	1	3	16×16	12-bit×6	8-bit×2	—	6	44/52QFP
HT46R94	2.2V~5.5V	400kHz~8MHz or 32768Hz	4K×15	192×8	8	2	√	1	4	16×16	12-bit×8	8-bit×3	√	8	44/52QFP

Note: 1. These devices are only available in OTP versions.
2. The RTC can be used as the system clock giving a typical operating current of 20μA at 3V.
3. The standby current is 1μA at 3V with the RTC still running.
4. The LED driver output pins can also be used to drive LCDs with a 28×4, 1/2 bias drive type.

A/D Flash Type MCU with EEPROM

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	8-bit Timer	Interrupt		A/D	PWM	PFD	Stack	Package
								Ext.	Int.					
HT46F46E	2.2V~5.5V	400kHz~12MHz	1K×14	64×8	128×8	13	1	1	2	8-bit×4	8-bit×1	√	4	16NSOP, 18DIP/SOP
HT46F47E	2.2V~5.5V	400kHz~12MHz	2K×14	64×8	128×8	13	1	1	2	9-bit×4	8-bit×1	√	6	16NSOP, 18DIP/SOP, 20SSOP
HT46F48E	2.2V~5.5V	400kHz~12MHz	2K×14	88×8	128×8	19	1	1	2	9-bit×4	8-bit×1	√	6	24SKDIP/SOP/SSOP
HT46F49E	2.2V~5.5V	400kHz~12MHz	4K×15	128×8	256×8	23	1	1	2	9-bit×4	8-bit×2	√	6	24SKDIP/SOP/SSOP, 28SKDIP/SOP/SSOP

A/D Type MCU with Comparator

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	Interrupt		A/D	Comparator	PPG	PFD	Stack	Package
							Ext.	Int.						
HT46R12A	2.2V~5.5V	400kHz~8MHz	2K×14	88×8	17	2	3	3	9-bit×4	2	1	√	8	24SKDIP/SOP
HT46R14A	2.2V~5.5V	400kHz~8MHz	4K×15	192×8	21	2	5	3	9-bit×8	2	2	√	8	28SKDIP/SOP

Note: 1. These devices are only available in OTP versions.
2. Part numbers with an "A" suffix have a comparator offset voltage that can be adjusted down to ± 2mV
3. PPG: Programmable Pulse Generator

8-Bit MCU

A/D Type MCU with OPA

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	Interrupt		LED Driver Output	A/D	PWM	OPA	PCK	Stack	Package
							Ext.	Int.							
HT46R32	2.2V~5.5V	400kHz~8MHz	2K×14	88×8	20	1	1	2	—	12-bit×4	8-bit×2	1	—	6	28SKDIP/SOP/SSOP
HT46R321					9				8×4	12-bit×6			√		
HT46R322					20				8×8	12-bit×4			—		44QFP
HT46R34	2.2V~5.5V	400kHz~8MHz	4K×15	192×8	20	1	1	2	—	12-bit×4	8-bit×2	1	—	6	28SKDIP/SOP/SSOP
HT46R342									8×8						44QFP
HT46R343	2.2V~5.5V	400kHz~8MHz	4K×15	192×8	37	2	1	4	8×8	12-bit×16	8-bit×2	1	√	6	44QFP

Note: These devices are only available in OTP versions.

A/D Type MCU with Multiple OPA & Comparator

Part No.	VDD	VIN	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		OPA	CMP	LDO	PFD	Stack	Package
							8-bit	16-bit	Ext.	Int.						
HT46RS03	2.2V~5.5V	—	400kHz~16MHz	2K×14	88×8	20	1	1	1	3	3	1	—	√	4	16/20DIP, 16/20SSOP
HT46RS03P	5.0V	5.5V~24V											√			

Note: These devices are only available in OTP versions.

A/D Type MCU with LCD

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Timer			Interrupt		A/D	PWM	PFD	UART	SPI	Stack	Package
							8-bit	16-bit	RTC	Ext.	Int.							
HT46R62 HT46C62	2.2V~5.5V	400kHz~8MHz or 32768Hz	2K×14	88×8	20	19×4 or 20×3	1	—	√	2	3	9-bit×6	8-bit×3	√	—	—	6	52QFP, 56SSOP
HT46R63 HT46C63	2.2V~5.5V	400kHz~8MHz	4K×15	208×8	32	19×4 or 20×3	—	1	√	2	4	8-bit×8	8-bit×4	—	—	—	8	56SSOP, 100QFP
HT46R64 HT46C64	2.2V~5.5V	400kHz~8MHz or 32768Hz	4K×15	192×8	24	32×4 or 33×3	1	1	√	2	4	10-bit×8	8-bit×4	√	—	—	8	52QFP, 56SSOP, 100QFP
HT46R65 HT46C65	2.2V~5.5V	400kHz~8MHz or 32768Hz	8K×16	384×8	24	40×4 or 41×3	—	2	√	2	4	10-bit×8	8-bit×4	√	—	—	16	52QFP, 56SSOP, 100QFP
HT46R652	2.2V~5.5V	400kHz~8MHz or 32768Hz	8K×16	384×8	32	40×4 or 41×3	—	2	√	2	4	12-bit×8	8-bit×16	√	—	—	16	100QFP
HT46RU66 HT46CU66	2.2V~5.5V	400kHz~8MHz or 32768Hz	16K×16	576×8	32	46×4 or 47×3	1	2	√	2	4	12-bit×8	8-bit×4	√	√	—	16	52QFP, 56SSOP, 100QFP
HT46RU67 HT46CU67	2.2V~5.5V	400kHz~8MHz or 32768Hz	32K×16	768×8	32	46×4 or 47×3	1	2	√	2	4	12-bit×8	8-bit×4	√	√	√	16	52QFP, 56SSOP, 100QFP

Note: Part numbers including "C" are mask version devices while "R" are OTP devices.

TinyPower™ A/D Type MCU with LCD

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Segment Share Output	Timer			Interrupt		A/D	PWM	PFD	Interface	Stack	Package
								8-bit	16-bit	RTC	Ext.	Int.						
HT56R62*	2.2V~5.5V	400kHz~12MHz or 32768Hz	2K×14	128×8	20	24×4 or 25×3	16	2	—	√	2	4	12-bit×6	12-bit×3	√	SPI/I²C	6	52QFP, 64LQFP
HT56R64	2.2V~5.5V	400kHz~12MHz or 32768Hz	4K×15	192×8	24	32×4 or 33×3	24	1	1	√	2	4	12-bit×8	12-bit×4	√	SPI/I²C	8	52QFP, 64LQFP, 100QFP
HT56R65*	2.2V~5.5V	400kHz~12MHz or 32768Hz	8K×16	576×8	24	40×4 or 41×3	24	2	1	√	2	4	12-bit×8	12-bit×4	√	SPI/I²C	12	52QFP, 64LQFP, 100QFP
HT56R66*	2.2V~5.5V	400kHz~12MHz or 32768Hz	16K×16	1152×8	32	48×4 or 49×3	24	3	1	√	2	4	12-bit×8	12-bit×4	√	SPI/I²C	12	52QFP, 64LQFP, 100QFP
HT56R67*	2.2V~5.5V	400kHz~12MHz or 32768Hz	32K×16	2304×8	32	48×4 or 49×3	24	3	1	√	2	4	12-bit×8	12-bit×4	√	SPI/I²C	12	52QFP, 64LQFP, 100QFP
HT56R642*	2.2V~5.5V	400kHz~12MHz or 32768Hz	4K×15	384×8	24	16×16 or 24×8	16	1	1	√	2	4	12-bit×8	12-bit×4	√	SPI/I²C	8	64LQFP, 100QFP
HT56R644*	2.2V~5.5V	400kHz~12MHz or 32768Hz	4K×15	576×8	24	32×16 or 40×8	24	1	1	√	2	4	12-bit×8	12-bit×4	√	SPI/I²C	8	100QFP
HT56R654*			8K×16	1152×8				2									12	
HT56R656	2.2V~5.5V	400kHz~12MHz or 32768Hz	8K×16	1152×8	24	48×16 or 56×8	24	2	1	√	2	4	12-bit×8	12-bit×4	√	SPI/I²C	12	100QFP
HT56R666			16K×16					3										
HT56R668	2.2V~5.5V	400kHz~12MHz or 32768Hz	16K×16	2304×8	24	64×16 or 72×8	24	3	1	√	2	4	12-bit×8	12-bit×4	√	SPI/I²C	12	100QFP, 128QFP
HT56R678			32K×16															

* Under development, available in 3Q, 2008.
Note: This device is only available in OTP versions.

8-Bit MCU

Dual Slope A/D Type MCU with LCD

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Timer				Interrupt		Dual Slope ADC	Charge Pump, Regulator	UART	Stack	Package
							8-bit	16-bit	18-bit	RTC	Ext.	Int.					
HT46R71D-1	2.2V~5.5V	4MHz	2K×14	32×8	10	10×3	1	1	—	—	1	3	1ch	√	—	4	48SSOP
HT46R72D-1	2.2V~5.5V	400kHz~8MHz	2K×15	96×8	12	16×4 or 17×3	1	1	—	—	1	3	1ch	√	—	4	52QFP
HT46R73D-1			4K×15														
HT46R74D-1	2.2V~5.5V	400kHz~8MHz	4K×15	96×8	10	15×4 or 16×3	1	—	1	√	2	4	1ch	√	—	6	56SSOP
HT46RU75D-1	2.2V~5.5V	400kHz~8MHz	8K×16	160×8	18	40×4 or 41×3	—	1	1	√	1	5	4ch	√	√	16	100QFP

Note: These devices are only available in OTP versions.

16 Channel A/D MCU & SPI Interface

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	Ext. Interrupt	SPI	A/D	PWM	Stack	Package
HT82J30R HT82J30A	2.2V~5.5V	4MHz~12MHz	4K×15	216×8	35	1	2	2	8-bit×16	8-bit×1	6	28SKDIP/SOP, 44QFP
HT82J31A	2.2V~5.5V	4MHz~12MHz	4K×15	216×8	22	1	2	2	—	—	6	28SKDIP/SOP

Note: Part numbers including "A" are mask version devices while "R" are OTP devices.

A/D Type MCU with UART

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		I²C	A/D	PWM	PFD	UART	SPI	Stack	Package
						8-bit	16-bit	Ext.	Int.								
HT46RU22	2.2V~5.5V	400kHz~8MHz	2K×14	64×8	19	1	—	1	3	√	9-bit×8	8-bit×1	√	√	—	6	24SKDIP/SOP, 24SSOP
HT46RU232	2.2V~5.5V	400kHz~8MHz	4K×16	192×8	40	1	2	1	4	√	12-bit×8	8-bit×4	√	√	—	8	28SKDIP/SOP, 48SSOP
HT46RU24	2.2V~5.5V	400kHz~8MHz	8K×16	384×8	40	1	2	1	5	√	12-bit×8	8-bit×4	√	√	—	16	28SKDIP/SOP, 48SSOP
HT46RU25 HT46CU25	2.2V~5.5V	400kHz~8MHz	16K×16	576×8	48	1	2	1	5	√	12-bit×8	8-bit×4	√	√	—	16	48/56SSOP
HT46RU26 HT46CU26*	2.2V~5.5V	400kHz~8MHz	32K×16	768×8	48	1	2	1	5	√	12-bit×8	8-bit×4	√	√	√	16	48/56SSOP

* Under development, available in 3Q, 2008.

Note: Part numbers including "C" are mask version devices while "R" are OTP devices.

I/O Type USB MCU with SPI (USB 1.1 Full Speed)

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		End-points	LVR	SPI	Stack	Package
						8-bit	16-bit	Ext.	Int.					
HT82A520R*	2.2V~5.5V	6MHz or 12MHz	4K×15	160×8	24	—	1	1	3	5	√	1	6	18SOP, 20/24/28SSOP
HT82A523R	3.3V~5.5V	6MHz or 12MHz	4K×15	192×8	40	1	1	1	5	4	√	2	6	32LQFP, 48SSOP, 52QFP

* Under development, available in 2Q, 2008.

Note: These devices are only available in OTP versions.

A/D Type USB MCU with SPI (USB 1.1 Full Speed)

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer			Interrupt		End-points	A/D	PWM	SPI	Stack	Package
						8-bit	16-bit	RTC	Ext.	Int.						
HT46RB50	4.4V~5.5V	6MHz or 12MHz	4K×15	192×8	38	1	1	—	1	5	4	10-bit×8	8-bit×2	1	6	28SKDIP/SOP, 48SSOP
HT46RB70	4.4V~5.5V	6MHz or 12MHz	8K×16	384×8	38	—	2	—	1	5	6	10-bit×8	8-bit×4	1	16	28SKDIP/SOP, 48SSOP
HT82A620R*	2.2V~5.5V	6MHz or 12MHz	4K×15	160×8	24	—	1	—	1	3	5	12-bit×16	8-bit×2	1	6	18SOP, 20/24/28SSOP
HT82A623R*	2.2V~5.5V	6MHz or 12MHz	4K×15	160×8	32	—	2	√	1	5	5	12-bit×16	8-bit×2	2	6	28SOP/SSOP, 44QFN

* Under development, available in 2Q, 2008.

Note: These devices are only available in OTP versions.

I/O Type MCU with USB Interface (USB 1.1 Low Speed)

Part No.	VDD	System Clock	Program Memory	Data Memory		I/O	Timer		End-points	Stack	Package
				SRAM	EEPROM		8-bit	16-bit			
HT82K94E HT82K94A	2.2V~5.5V	6MHz or 12MHz	6K×16	224×8	—	40	1	1	4	8	32QFN, 48SSOP
HT82K95E HT82K95A	3.3V~5.5V	6MHz or 12MHz	4K×15	160×8	—	32	1	1	3	8	28SOP, 32QFN, 48SSOP
HT82K95EE HT82K95AE					128×8						28SOP

Note: 1. Part numbers with a single "A" suffix are mask version devices, and with a single "E" suffix are OTP devices.
2. Part numbers with an "AE" suffix are mask version devices with EEPROM, and with an "EE" suffix are OTP devices with EEPROM.

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I/O Type MCU with USB Interface (USB 1.1 Low Speed)

Part No.	VDD	System Clock	Program Memory	Data Memory		I/O	Timer		End-points	Stack	Package
				SRAM	EEPROM		8-bit	16-bit			
HT82M99E HT82M99A	3.3V~5.5V	6MHz or 12MHz	2K×14	96×8	—	12	—	1	2	4	18DIP/SOP, 20DIP/SOP/SSOP
HT82M99EE HT82M99AE					128×8						20SSOP(209mil)
HT82M9AE HT82M9AA	3.3V~5.5V	6MHz or 12MHz	4K×15	224×8	—	16	—	1	3	4	20SOP/SSOP(209mil), 24SSOP(209mil), 32QFN
HT82M9AEE					128×8						20SSOP(209mil). 24SSOP(209mil)
HT82M9BE HT82M9BA	3.3V~5.5V	6MHz or 12MHz	8K×16	224×8	—	20	1	1	4	8	24SSOP(209mil), 28SSOP(209mil) , 32QFN
HT82M9BEE					128×8						28SOP

Note: 1. Part numbers with a single "A" suffix are mask version devices, and with a single "E" suffix are OTP devices.
2. Part numbers with an "AE" suffix are mask version devices with EEPROM, and with an "EE" suffix are OTP devices with EEPROM.

A/D Type MCU with USB Interface (USB 1.1 Low Speed)

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		A/D	End-points	PWM	Stack	Package
						8-bit	16-bit					
HT82K96E HT82K96A	4.4V~5.5V	6MHz or 12MHz	4K×15	160×8	32	1	1	8-bit×6	3	—	8	28SOP, 48SSOP
HT82J97E HT82J97A	4.0V~5.5V	6MHz or 12MHz	2K×14	96×8	20	—	1	8-bit×6	2	8-bit×2	4	20/28SOP

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

27MHz Keyboard/Mouse TX MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	16-bit Timer	Built-in DC/DC	27MHz AMP	Stack	Package
HT82M72E HT82M72A	2.0V~3.3V	27MHz	1K×14	96×8	17	1	√	√	2	20/28SOP, 28SSOP
HT82K72E HT82K72A	2.0V~3.3V	27MHz	2K×14	96×8	36	1	—	√	4	48SSOP

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

2.4GHz Keyboard/Mouse TX MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	16-bit Timer	Built-in DC/DC	SPI	Stack	Package
HT82M73E	2.0V~3.3V	4MHz~6MHz	2K×15	128×8	20	1	√	1	4	20SOP, 20/28SSOP
HT82K73E	2.0V~3.3V	4MHz~6MHz	2K×15	128×8	39	1	√	1	4	48SSOP

Note: These devices are only available in OTP versions.

R-F Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Timer		Interrupt		R-F	IR Carrier	PFD	Stack	Package
							16-bit	RTC	Ext.	Int.					
HT47C06L	1.2V~2.2V	32768Hz~128kHz	1K×16	32×8	8	13×3 or 14×2	1	—	—	2	1ch	—	—	2	44QFP
HT47R10A-1 HT47C10-1	2.2V~5.5V	400kHz~8MHz	1K×16	32×8	8	9×4	1	√	1	2	1ch	—	—	2	44QFP
HT47C10L	1.2V~2.2V	32768Hz							—						
HT47R20A-1 HT47C20-1	2.2V~5.5V	400kHz~8MHz	2K×16	64×8	12	19×4 or 20×3	1	√	1	3	2ch	√	√	4	64LQFP
HT47C20L	1.2V~2.2V	32768Hz										—			

Note: 1. Part numbers including "C" are mask version devices, "R" are OTP devices, while part numbers suffixed with "L" are low voltage mask version devices.
2. For the low voltage mask version devices, note that the HT47R20A-1 device can be used as a corresponding OTP device.

C/R-F Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		C/R-F	High Current Output	A/D	PWM	OPA	Stack	Package
						8-bit	16-bit	Ext.	Int.							
HT45R35	2.2V~5.5V	400kHz~8MHz	2K×14	120×8	16	1	1	2	2	12	—	—	—	—	4	16DIP/NSOP, 20DIP/SOP, 24/28SKDIP/SOP
HT45R36	2.2V~5.5V	400kHz~8MHz	2K×14	120×8	25	1	1	2	2	16	8×8	—	—	—	4	44/52QFP
HT45R38	2.2V~5.5V	400kHz~8MHz	4K×15	192×8	29	2	1	2	4	12	8×8	12-bit×5	8-bit×2	1	6	52QFP

Note: These devices are only available in OTP versions.

8-Bit MCU

Brushless DC Motor Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Input	Timer		Interrupt			A/D	PWM	PFD	Stack	OPA	Comparator	Package
							8-bit	16-bit	Ext.	Hall Ext.	Int.							
HT45RM03A	2.2V~5.5V	12MHz	4K×15	192×8	25	1	1	1	1	1	5	12-bit×8	10-bit×3	√	8	1	1	28SOP

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Remote Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		IR Carrier	LVR	PFD	Stack	Package
						8-bit	16-bit	Ext.	Int.					
HT48RA0-2 HT48CA0-2	2.0V~3.6V	400kHz~4MHz	1K×14	32×8	15	—	—	—	—	√	√	—	1	20SOP/SSOP
HT48RA0-3 HT48CA0-3		4MHz			16									
HT48RA0-1 HT48CA0-1	2.0V~3.6V	400kHz~4MHz	1K×14	32×8	17	—	—	—	—	√	√	—	1	24SOP/SSOP
HT48RA1 HT48CA1	2.0V~5.5V	400kHz~8MHz	8K×16	224×8	23	1	1	1	2	—	√	√	8	28SOP, 28SSOP(209mil)
HT48RA3 HT48CA3	2.0V~5.5V	400kHz~8MHz	24K×16	224×8	23	1	1	1	2	—	√	√	8	28SOP, 28SSOP(209mil)
HT48RA5 HT48CA5	2.0V~5.5V	400kHz~8MHz	40K×16	224×8	23	1	1	1	2	—	√	√	8	28SOP, 28SSOP(209mil)

Note: Part numbers including "C" are mask version devices while "R" are OTP devices.

Remote Type MCU with LCD

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Input	LCD	Segment Share		Timer			Interrupt		IR Carrier	LVR	Stack	Package
								I/O	Output	8-bit	16-bit	RTC	Ext.	Int.				
HT49RA0 HT49CA0	2.0V~3.6V	4MHz	2K×14	96×8	8	8	21×2, 21×3, 20×4	0	8	1	—	√	2	3	√	√	4	52QFP
HT49RA1 HT49CA1	2.0V~3.6V	4MHz	4K×15	160×8	8	8	32×4, 33×3, 33×2	4	8	1	1	√	2	4	√	√	4	52QFP, 64LQFP

Note: Part numbers including "C" are mask version devices while "R" are OTP devices.

USB Audio MCU

Part No.	VDD	System Clock	End-points	Transfer	FIFO (Byte)	Program Memory	Data Memory	I/O	A/D	D/A	Power AMP	Other	Package
HT82A821R	3.3V~5.5V	6MHz or 12MHz	EP0	CTL	8	2K×15	192×8	8	—	16-bit 48kHz ×2	4Ω ×2	—	24SOP/SSOP
			EP1	INT	8								
			EP2	ISO(O)	384								
HT82A822R	3.3V~5.5V	6MHz or 12MHz	EP0	CTL	8	4K×15	704×8 + 512×8(read only)	24	—	16-bit 48kHz ×2	4Ω ×2	—	48SSOP
			EP1	INT	8								
			EP2	ISO(O)	384								
HT82A834R	3.3V~5.5V	6MHz or 12MHz	EP0	CTL	8	4K×15	192×8	24	16-bit 16kHz	16-bit 48kHz ×2	4Ω ×2	SPI, PFD, MUSIC_IN	48SSOP, 48LQFP
			EP1, EP4	INT	8, 32								
			EP2	ISO(O)	384								
			EP3	ISO(I)	64								
HT82A836R	3.3V~5.5V	6MHz or 12MHz	EP0	CTL	8	8K×16	384×8	44	16-bit 16kHz	16-bit 48kHz ×2	4Ω ×2	ADC×6, PWM×2, SPI, PFD, MUSIC_IN	80LQFP, 100QFP
			EP1, EP4	INT	8, 32								
			EP2	ISO(O)	384								
			EP3	ISO(I)	64								
HT82A850R	3.3V~5.5V	6MHz or 12MHz	—	—	—	4K×15	384×8	24	16-bit 8kHz	16-bit 48kHz ×2	4Ω ×2	SPI, PFD, MUSIC_IN	48LQFP
HT82A851R	3.3V~5.5V	6MHz or 12MHz	EP0	CTL	8	4K×15	384×8	16	—	—	—	SPI, PFD	24SSOP
			EP1, EP4	INT	8, 32								
			EP2	ISO(O)	384								
			EP3	ISO(I)	32								

Note: These devices are only available in OTP versions.

8-Bit MCU

I/O Type Phone MCU

Part No.	VDD	Program Memory	Data Memory	General I/O	Dialer I/O	Timer	External Interrupt	Stack	DTMF Generator	Package
HT95A100 HT95A10P	2.4V~5.5V	4K×16	384×8	18	2	16-bit×2	3	4	√	28SOP
HT95A200 HT95A20P	2.4V~5.5V	4K×16	1152×8	28	8	16-bit×2	4	8	√	48SSOP
HT95A300 HT95A30P	2.4V~5.5V	8K×16	2112×8	28	8	16-bit×2	4	8	√	48SSOP
HT95A400 HT95A40P	2.4V~5.5V	16K×16	2880×8	44	8	16-bit×2	4	12	√	64LQFP
HT95R22	2.2V~5.5V	4K×16	576×8	20	—	16-bit×2	2	8	√	28SOP
HT95R23	2.2V~5.5V	4K×16	1152×8	36	—	16-bit×2	4	8	√	48SSOP
HT95R24	2.2V~5.5V	8K×16	2112×8	36	—	16-bit×2	4	8	√	48SSOP
HT95R25*	2.2V~5.5V	16K×16	2112×8	52	—	16-bit×2	4	8	√	64LQFP

* Under development, available in 4Q, 2008.

Note: Part numbers suffixed with "P" or which include an "R" are OTP devices, all others are mask version devices.

I/O Type Phone MCU with DTMF Receiver

Part No.	VDD	Program Memory	Data Memory	General I/O	Timer	External Interrupt	SPI	Stack	DTMF Receiver	DTMF Generator	Package
HT95R33	2.2V~5.5V	4K×16	1152×8	28	16-bit×2	4	—	8	√	√	48SSOP
HT95R34	2.2V~5.5V	8K×16	2112×8	28	16-bit×2	4	—	8	√	√	48SSOP
HT95R35*	2.2V~5.5V	16K×16	2112×8	44	16-bit×3	4	√	8	√	√	64LQFP

* Under development, available in 4Q, 2008.

Note: These devices are only available in OTP versions.

LCD Type Phone MCU

Part No.	VDD	Program Memory	Data Memory	General I/O	Dialer I/O	LCD	Timer	External Interrupt	Stack	DTMF Generator	Package
HT95L000 HT95L00P	2.4V~5.5V	4K×16	384×8	14~18	6	12×8~ 16×8	16-bit×2	3	4	√	56SSOP
HT95L100 HT95L10P	2.4V~5.5V	4K×16	1152×8	16~20	8	16×8~ 20×8	16-bit×2	4	8	√	64LQFP
HT95L200 HT95L20P	2.4V~5.5V	8K×16	1152×8	20~28	8	24×8~ 24×16	16-bit×2	4	8	√	100QFP
HT95L300 HT95L30P	2.4V~5.5V	8K×16	2112×8	16~28	8	36×16~ 48×16	16-bit×2	4	8	√	100QFP
HT95L400 HT95L40P	2.4V~5.5V	16K×16	2880×8	28~40	8	36×16~ 48×16	16-bit×2	4	12	√	128QFP

Note: Part numbers suffixed with "P" are OTP devices, all others are mask version devices.

CID Type Phone MCU

Part No.	VDD	Program Memory	Data Memory	General I/O	Dialer I/O	LCD	Timer	External Interrupt	Stack	DTMF Generator	FSK Receiver	Package
HT95C200 HT95C20P	2.4V~5.5V	8K×16	1152×8	20~28	8	24×8~ 24×16	16-bit×2	4	8	√	√	128QFP
HT95C300 HT95C30P	2.4V~5.5V	8K×16	2112×8	16~28	8	36×16~ 48×16	16-bit×2	4	8	√	√	128QFP
HT95C400 HT95C40P	2.4V~5.5V	16K×16	2880×8	28~40	8	36×16~ 48×16	16-bit×2	4	12	√	√	128QFP

Note: Part numbers suffixed with "P" are OTP devices, all others are mask version devices.

Voice MCU

Part No.	VDD	Program Memory	Data Memory	Voice ROM	Voice Capacity	I/O	Timer		D/A	Stack	Package
							16-bit	RTC			
HT86030	2.4V~5.2V	8K×16	208×8	96K×8	36sec	16	2	—	12-bit×1	8	28SOP
HT86070	2.4V~5.2V	8K×16	208×8	192K×8	72sec	16	2	—	12-bit×1	8	28SOP
HT86072	2.4V~5.2V	8K×16	208×8	192K×8	72sec	23	3	√	12-bit×1	8	28SOP, 44/100QFP
HT86144	2.4V~5.2V	8K×16	208×8	384K×8	144sec	23	3	√	12-bit×1	8	28SOP, 44/100QFP
HT86R192 HT86192	2.4V~5.2V	8K×16	208×8	512K×8	192sec	23	3	√	12-bit×1	8	28SOP, 44/100QFP
HT86R384	2.4V~5.2V	8K×16	208×8	1024K×8	384sec	23	3	√	12-bit×1	8	28SOP
HT86384											28SOP, 100QFP
HT86576	2.4V~5.2V	8K×16	208×8	1536K×8	576sec	23	3	√	12-bit×1	8	32SOP, 100QFP
HT86768	2.4V~5.2V	8K×16	208×8	2048K×8	768sec	23	3	√	12-bit×1	8	32SOP, 100QFP

Note: 1. Part numbers including "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.

8-Bit MCU

Enhanced Voice MCU

Part No.	VDD	Program Memory	Data Memory	Voice ROM	Voice Capacity	I/O	Timer		D/A	Stack	Package
							8-bit	16-bit			
HT86B10	2.4V~5.5V	8K×16	192×8	192K×8	72sec	16	3	—	12-bit×1	8	28SOP, 44/100QFP
HT86B20	2.4V~5.5V	8K×16	192×8	256K×8	96sec	16	3	—	12-bit×1	8	28SOP, 44/100QFP
HT86BR30 HT86B30	2.4V~5.5V	8K×16	192×8	384K×8	144sec	20	3	—	12-bit×1	8	28SOP, 44/100QFP
HT86B40	2.4V~5.5V	8K×16	384×8	512K×8	192sec	20	3	1	12-bit×1	8	28SOP, 44/100QFP
HT86B50	2.4V~5.5V	8K×16	384×8	768K×8	288sec	20	3	1	12-bit×1	8	28SOP, 44/100QFP
HT86BR60	2.4V~5.5V	8K×16	384×8	1024K×8	384sec	20	3	1	12-bit×1	8	28SOP
HT86B60											28SOP, 44/100QFP
HT86B70	2.4V~5.5V	8K×16	384×8	1536K×8	576sec	24	3	1	12-bit×1	8	44/100QFP
HT86B80	2.4V~5.5V	8K×16	384×8	2048K×8	768sec	24	3	1	12-bit×1	8	44/100QFP
HT86B90	3.3V~5.5V	8K×16	384×8	3072K×8	1152sec	24	3	1	12-bit×1	8	44/100QFP

Note: 1. Part numbers including "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.

A/D Voice MCU

Part No.	VDD	Program Memory	Data Memory	Voice ROM	Voice Capacity	I/O	Timer		D/A	A/D	Stack	Package
							8-bit	RTC				
HT86A36*	2.2V~5.5V	8K×16	384×8	96K×8	36sec	40	4	√	12-bit×1	12-bit×4	8	44LQFP, 64LQFP(10x10mm)
HT86AR72* HT86A72*	2.2V~5.5V	8K×16	384×8	192K×8	72sec	40	4	√	12-bit×1	12-bit×4	8	44LQFP, 64LQFP(10x10mm)

* Under development, available in 2Q, 2008.

Note: 1. These devices are only available in OTP versions..
2. Evaluation kits are available for product development and verification purposes, please contact Holtek for further information.

Music MCU (4 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer	D/A	Speech	Package
HT36F2	2.4V~5.0V	32K×16	208×8	16	8-bit×2	16-bit×1	PCM	16/28SOP
HT36F6	2.4V~5.0V	64K×16	208×8	20	8-bit×2	16-bit×2	PCM	20/32SOP
HT36RFA HT36FA	2.4V~5.0V	128K×16	208×8	24	8-bit×2	16-bit×2	PCM	28/32SOP

Note: 1. Part numbers including "R" are OTP devices, all others are mask version devices.
2. The waveform data and program code share the same memory space.

Music MCU (8 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer	D/A	Speech	Package
HT36RA4 HT36A4	2.4V~5.0V	32K×16	208×8	8	8-bit×2	16-bit×1	PCM	16DIP/SOP
HT36A3	2.4V~5.0V	32K×16	208×8	20	8-bit×2	16-bit×1	PCM	28SOP, 48SSOP
HT36A2	2.4V~5.0V	64K×16	208×8	20	8-bit×2	16-bit×1	PCM	28SOP, 48SSOP
HT36RA1 HT36A1	2.4V~5.0V	64K×16	208×8	24	8-bit×2	16-bit×2	PCM	28SOP, 48SSOP

Note: 1. Part numbers including "R" are OTP devices, all others are mask version devices.
2. The waveform data and program code share the same memory space.

Music MCU (16 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer	D/A	Speech	Package
HT36RM4	2.6V~5.0V	64K×16	384×8	12	16-bit×2	16-bit×1	PCM	20DIP/SSOP(209mil)
HT36M4								20DIP/SSOP/TSSOP
HT36B4	2.4V~5.0V	64K×16	208×8	28	16-bit×2	16-bit×2	PCM	48SSOP
HT36B2	3.6V~5.0V	128K×16	512×8	32	16-bit×2	16-bit×2	PCM	28SOP, 56SSOP
HT36B0	3.6V~5.0V	256K×16	768×8	36	16-bit×2	16-bit×2	PCM	28SOP, 64LQFP

Note: 1. Part numbers including "R" are OTP devices, all others are mask version devices.
2. The waveform data and program code share the same memory space.

8-Bit MCU

Enhanced Music MCU (4 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer		D/A	A/D	Speech	Power AMP	Package
					8-bit	16-bit					
HT37Q20	2.4V~5.5V	32K×16	320×8	16	2	1	16-bit×1	—	PCM/ADPCM	—	20SOP, 48SSOP
HT37Q30	2.4V~5.5V	64K×16	320×8	20	2	1	16-bit×1	—	PCM/ADPCM	√	28SOP, 48SSOP
HT37Q40	3.3V~5.5V	96K×16	320×8	24	2	1	16-bit×1	—	PCM/ADPCM	√	28SOP, 80LQFP
HT37Q50	3.3V~5.5V	128K×16	320×8	24	2	1	16-bit×1	—	PCM/ADPCM	√	28SOP, 80LQFP
HT37Q60	3.3V~5.5V	192K×16	320×8	28	2	1	16-bit×1	—	PCM/ADPCM	√	28SOP, 80LQFP
HT37Q70	3.3V~5.5V	256K×16	320×8	28	2	1	16-bit×1	—	PCM/ADPCM	√	28SOP, 80LQFP

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

Enhanced Music MCU (8 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer		D/A	A/D	Speech	Power AMP	Package
					8-bit	16-bit					
HT37A20	2.4V~5.5V	32K×16	320×8	16	2	1	16-bit×1	—	PCM/ADPCM	—	20SOP, 48SSOP
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	24	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP
HT37A50	3.3V~5.5V	128K×16	320×8	24	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP
HT37A60	3.3V~5.5V	192K×16	320×8	28	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP
HT37A70	3.3V~5.5V	256K×16	320×8	28	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP

Note: 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		D/A	A/D	Speech	Power AMP	Package
					8-bit	16-bit					
HT37B50*	3.3V~5.5V	128K×16	768×8	32	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP
HT37B60*	3.3V~5.5V	192K×16	768×8	32	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP
HT37B70*	3.3V~5.5V	256K×16	768×8	32	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP

* Under development, available in 4Q, 2008.

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

Enhanced ROMless Music MCU (16 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer		D/A	A/D	Speech	Power AMP	Package
					8-bit	16-bit					
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.

Display Driver

RAM Mapping LCD Controller & Driver

Part No.	Common	Segment	VDD	LCD Voltage	Duty	Bias	Gray Scale	Serial Data	Built-in OSC.	Ext. Crystal	Package
HT1620	4	32	2.4V~3.3V	3/2VDD	1/2, 1/3, 1/4	1/2, 1/3	—	1	—	√	64LQFP
HT1621	4	32	2.4V~5.2V	3V~VDD	1/2, 1/3, 1/4	1/2, 1/3	—	1	√	√	28SKDIP, 44QFP, 48SSOP/LQFP, Gold Bump
HT1622	8	32	2.7V~5.2V	3V~VDD	1/8	1/4	—	1	√	—	44/52QFP, 64LQFP, Gold Bump
HT16220	8	32	2.7V~5.2V	3V~VDD	1/8	1/4	—	1	—	√	64LQFP
HT1623	8	48	2.7V~5.2V	3V~VDD	1/8	1/4	—	1	√	√	100QFP
HT1625	8	64	2.7V~5.2V	3V~VDD	1/8	1/4	—	1	√	√	100QFP
HT1626	16	48	2.7V~5.2V	3V~VDD	1/16	1/5	—	1	√	√	100QFP
HT1647	16	64	2.7V~5.2V	3V~VDD	1/16	1/4, 1/5	4	4	√	√	100QFP
HT1647A							—				
HT1650	32	64	2.7V~5.2V	3V~VDD	1/16, 1/32	1/5, 1/6	—	4	√	√	128QFP
HT1660	32	96	2.7V~5.2V	3V~VDD	1/16, 1/32	1/5, 1/6	—	4	√	√	208QFP
HT1670	32	128	2.7V~5.2V	3V~VDD	1/16, 1/32	1/5, 1/6	—	4	√	√	208QFP

RAM Mapping LED Controller & Driver

Part No.	Common	Segment	VDD	LED Output Current	Common Source Current	Common Sink Current	Package
HT1632	8	32	2.4V~5.5V	50mA	20mA	50mA	52QFP
	16	24					

Telephony LCD Driver

Part No.	Digit	VDD	LCD Voltage	Duty	Bias	RTC Display
HT1616C	12, 16	1.2V~1.7V	3V	1/3	1/2	√

Note: For the HT1613C, the RTC Display function can be deselected by a pad bonding option.

VFD Controller & Driver

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

VFD Clock

Part No.	VDD	Function Description	IDD Max.	Package	Futaba VFD Panel Part No.
HT16561	4V~16V	1/1 Duty, 12Hr	2mA	44QFP	4BT68ZM, 4BT224GN
HT16562	4V~18V	1/2 Duty, 12Hr	1mA	30SSOP	2BT167GNM, 2BT428GN
HT16565	4V~16V	1/1 Duty, 24Hr	2mA	44QFP	Please contact Futaba
HT16566	4V~18V	1/2 Duty, 24Hr	1mA	30SSOP	Please contact Futaba

Dot Character VFD Controller & Driver

Part No.	Segment	Digit	VDD	Output Voltage	Key Matrix	Display RAM	CGROM	CGRAM	Package
HT16514	80	24	2.7V~5.5V	50V	12×4	80×8 bits	248×5×8 bits	8×5×8 bits	144LQFP

Other

Part No.	VDD	Function Description	Package
HT74164	2.0V~6.6V	8-bit SIPO shift register	14DIP

Note: Compatible with 74HC164.

Memory

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	2.2V~5.5V	2	5	5	10	8DIP/SOP/TSSOP
HT93LC66	256×16/512×8	2.2V~5.5V	2	5	5	10	8DIP/SOP/TSSOP
HT93LC86	1024×16/2048×8	2.2V~5.5V	2	5	5	10	8DIP/SOP/TSSOP

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	2.2V~5.5V	400	5	5	5	8DIP/SOP/TSSOP
HT24LC04	512×8	2.2V~5.5V	400	5	5	5	8DIP/SOP/TSSOP
HT24LC08	1024×8	2.2V~5.5V	400	5	5	5	8DIP/SOP/TSSOP
HT24LC16	2048×8	2.2V~5.5V	400	5	5	5	8DIP/SOP/TSSOP
HT24LC32	4096×8	2.4V~5.5V	400	5	5	5	8DIP/SOP/TSSOP
HT24LC64	8192×8	2.4V~5.5V	400	5	5	5	8DIP/SOP/TSSOP
Note: I^2C is a trademark of Philips Semiconductors.							

Part No.	Capacity	VDD	Clock Rate (kHz)	Write Speed @2.4V (ms)	Operating Current @5V (mA)	Standby Current @5V (μA)	Package
HT2201	128×8	2.2V~5.5V	400	5	5	4	SIP-4, SOT25
Note: Operating temperature range −40°C ~ +85°C							

Remote Controller

Remote Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		IR Carrier	LVR	PFD	Stack	Package
						8-bit	16-bit	Ext.	Int.					
HT48RA0-2 HT48CA0-2	2.0V~3.6V	400kHz~4MHz	1K×14	32×8	15	—	—	—	—	√	√	—	1	20SOP/SSOP
HT48RA0-3 HT48CA0-3		4MHz			16									
HT48RA0-1 HT48CA0-1	2.0V~3.6V	400kHz~4MHz	1K×14	32×8	17	—	—	—	—	√	√	—	1	24SOP/SSOP
HT48RA1 HT48CA1	2.0V~5.5V	400kHz~8MHz	8K×16	224×8	23	1	1	1	2	—	√	√	8	28SOP, 28SSOP(209mil)
HT48RA3 HT48CA3	2.0V~5.5V	400kHz~8MHz	24K×16	224×8	23	1	1	1	2	—	√	√	8	28SOP, 28SSOP(209mil)
HT48RA5 HT48CA5	2.0V~5.5V	400kHz~8MHz	40K×16	224×8	23	1	1	1	2	—	√	√	8	28SOP, 28SSOP(209mil)

Note: Part numbers including "C" are mask version devices while "R" are OTP devices.

Remote Type MCU with LCD

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Input	LCD	Segment Share		Timer			Interrupt		IR Carrier	LVR	Stack	Package
								I/O	Output	8-bit	16-bit	RTC	Ext.	Int.				
HT49RA0 HT49CA0	2.0V~ 3.6V	4MHz	2K×14	96×8	8	8	21×2, 21×3, 20×4	0	8	1	—	√	2	3	√	√	4	52QFP
HT49RA1 HT49CA1	2.0V~ 3.6V	4MHz	4K×15	160×8	8	8	32×4, 33×3, 33×2	4	8	1	1	√	2	4	√	√	4	52QFP, 64LQFP

Note: Part numbers including "C" are mask version devices while "R" are OTP devices.

2^{12} Encoder/Decoder

Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Data Type	Trig.	Check Times	38kHz Carrier	Package	Pair
HT12A	Encoder	2.4V~5V	8	4	—	Data	—	√	18DIP, 20SOP	HT12D/12F
HT12E	Encoder	2.4V~12V	8	4	—	$\overline{TE}$	—	—	18DIP, 20SOP	HT12D/12F
HT12D	Decoder	2.4V~12V	8	4	Latch	—	3	—	18DIP, 20SOP	HT12A/12E
HT12F	Decoder	2.4V~12V	12	0	—	—	3	—	18DIP, 20SOP	HT12A/12E

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

3^{12} Encoder/Decoder

Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Data Type	Trig.	Check Times	Package	Pair
HT6010	Encoder	2.4V~12V	8	4	—	$\overline{TE}$	—	18DIP, 20SOP	HT6030/32/34
HT6012	Encoder	2.4V~12V	10	2	—	Data	—	18DIP, 20SOP	HT6032
HT6014	Encoder	2.4V~12V	8	4	—	Data	—	18DIP, 20SOP	HT6034
HT6030	Decoder	2.4V~12V	12	0	—	—	2	18DIP, 20SOP	HT6010
HT6032	Decoder	2.4V~12V	10	2	Latch	—	2	18DIP, 20SOP	HT6010/12
HT6034	Decoder	2.4V~12V	8	4	Latch	—	2	18DIP, 20SOP	HT6010/14

3^{18} Encoder/Decoder

Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Data Type	Trig.	Check Times	Package	Pair
HT680	Encoder	2.4V~12V	8	4	—	TE	—	18DIP/SOP	HT692
HT600	Encoder	2.4V~12V	9	5	—	TE	—	20DIP/SOP	HT604L/614
HT6207	Encoder	2.4V~12V	10	4	—	Data	—	20DIP/SOP	HT604L/614
HT604L	Decoder	2.4V~12V	10	4	Latch	—	2	20DIP/SOP	HT600/6207
HT614	Decoder	2.4V~12V	10	4	Momentary	—	2	20DIP/SOP	HT600/6207
HT692	Decoder	2.4V~12V	10	2	Momentary	—	2	18DIP	HT680

Learning Encoder

Part No.	VDD	Addr. No.	Addr./Data No.	Trig.	Package
HT6P20A	2V~12V	24	0	—	8DIP/SOP
HT6P20B	2V~12V	22	2	Data	8DIP/SOP
HT6P20D	2V~12V	20	4	Data	16DIP/NSOP

TV Remote Controller

Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Key No.	38kHz Carrier	Package
HT6221	Encoder	1.8V~3.5V	16	8	32	√	20SOP
HT6222	Encoder	1.8V~3.5V	16	8	64	√	24SOP
HT6230	Encoder	2.4V~5.2V	5	6	96	√	28SOP
HT6240-002	Encoder	2.2V~3.6V	8	8	32	√	20/24SOP

RFID

Part No.	Supply Freq.	Modulation	Memory (Data)	Baud Rate @3V	Check	Anti-Collision	Encoding	Package
HT672A	13.56MHz	ASK	96(64)	5K (bps)	CRC-16	—	PWM	Chip Form
HT672B	13.56MHz	ASK	40(32)	10K (bps)	CRC-8	—	PWM	Chip Form
HT6740	13.56MHz	ASK	17(11)	10K (bps)	CRC-6	√	PWM	Chip Form

Power Management

HT71XX TinyPower™ LDO

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (mA)	Typical Current Consumption (μA)	Tolerance	Package
HT1015-1	12V	1.5V	18	2.2	±3%	TO92, SOT25, SOT89
HT7130-1	24V	3.0V	30	2.5	±3%	TO92, SOT25, SOT89
HT7133-1	24V	3.3V	30	2.5	±3%	TO92, SOT25, SOT89
HT7136-1	24V	3.6V	30	2.5	±3%	TO92, SOT25, SOT89
HT7144-1	24V	4.4V	30	2.5	±3%	TO92, SOT25, SOT89
HT7150-1	24V	5.0V	30	2.5	±3%	TO92, SOT25, SOT89

HT75XX TinyPower™ LDO

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (mA)	Typical Current Consumption (μA)	Tolerance	Package
HT7530-1	24V	3.0V	100	2.5	±3%	TO92, SOT25, SOT89
HT7533-1	24V	3.3V	100	2.5	±3%	TO92, SOT25, SOT89
HT7536-1	24V	3.6V	100	2.5	±3%	TO92, SOT25, SOT89
HT7544-1	24V	4.4V	100	2.5	±3%	TO92, SOT25, SOT89
HT7550-1	24V	5.0V	150	2.5	±3%	TO92, SOT25, SOT89

HT73XX TinyPower™ LDO

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (mA)	Typical Current Consumption (μA)	Tolerance	Package
HT7318	12V	1.8V	150	3.5	±3%	TO92, SOT89
HT7325	12V	2.5V	180	3.5	±3%	TO92, SOT89
HT7327	12V	2.7V	200	3.5	±3%	TO92, SOT89
HT7330	12V	3.0V	250	3.5	±3%	TO92, SOT89
HT7333	12V	3.3V	250	3.5	±3%	TO92, SOT89
HT7335	12V	3.5V	250	3.5	±3%	TO92, SOT89
HT7350	12V	5.0V	250	3.5	±3%	TO92, SOT89

HT72XX TinyPower™ LDO

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (mA)	Typical Current Consumption (μA)	Tolerance	Package
HT7218	8V	1.8V	300	4	±2%	TO92, SOT23, SOT25, SOT89
HT7225	8V	2.5V	300	4	±2%	TO92, SOT23, SOT25, SOT89
HT7227	8V	2.7V	300	4	±2%	TO92, SOT23, SOT25, SOT89
HT7230	8V	3.0V	300	4	±2%	TO92, SOT23, SOT25, SOT89
HT7233	8V	3.3V	300	4	±2%	TO92, SOT23, SOT25, SOT89
HT7250	8V	5.0V	300	4	±2%	TO92, SOT23, SOT25, SOT89

HT78XX TinyPower™ LDO

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (mA)	Typical Current Consumption (μA)	Tolerance	Package
HT7818	8V	1.8V	500	4	±2%	TO92, SOT223, SOT25, SOT89
HT7825	8V	2.5V	500	4	±2%	TO92, SOT223, SOT25, SOT89
HT7827	8V	2.7V	500	4	±2%	TO92, SOT223, SOT25, SOT89
HT7830	8V	3.0V	500	4	±2%	TO92, SOT223, SOT25, SOT89
HT7833	8V	3.3V	500	4	±2%	TO92, SOT223, SOT25, SOT89
HT7850	8V	5.0V	500	4	±2%	TO92, SOT223, SOT25, SOT89

Power Management

HT1087 General Purpose LDO

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (mA)	Typical Current Consumption (mA)	Tolerance	Package
HT1087-ADJ	12V	Adj.	500	8	±2%	TO92, SOT89
HT1087-15	12V	1.5V	500	8	±2%	TO92, SOT89
HT1087-18	12V	1.8V	500	8	±2%	TO92, SOT89
HT1087-25	12V	2.5V	500	8	±2%	TO92, SOT89
HT1087-33	12V	3.3V	500	8	±2%	TO92, SOT89
HT1087-50	12V	5.0V	500	8	±2%	TO92, SOT89

HT1117 General Purpose LDO

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (A)	Typical Current Consumption (mA)	Tolerance	Package
HT1117-ADJ	12V	Adj.	1	8	±2%	SOT223
HT1117-18	12V	1.8V	1	8	±2%	SOT223
HT1117-25	12V	2.5V	1	8	±2%	SOT223
HT1117-28	12V	2.85V	1	8	±2%	SOT223
HT1117-33	12V	3.3V	1	8	±2%	SOT223
HT1117-50	12V	5.0V	1	8	±2%	SOT223

HT1086 General Purpose LDO

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (A)	Typical Current Consumption (mA)	Tolerance	Package
HT1086-ADJ	12V	Adj.	1.5	8	±2%	TO220, TO252, TO263, SOT223
HT1086-18	12V	1.8V	1.5	8	±2%	TO220, TO252, TO263, SOT223
HT1086-25	12V	2.5V	1.5	8	±2%	TO220, TO252, TO263, SOT223
HT1086-28	12V	2.85V	1.5	8	±2%	TO220, TO252, TO263, SOT223
HT1086-33	12V	3.3V	1.5	8	±2%	TO220, TO252, TO263, SOT223
HT1086-50	12V	5.0V	1.5	8	±2%	TO220, TO252, TO263, SOT223

TinyPower™ Voltage Detector

Part No.	Maximum Input Voltage	Detect Voltage	Hysteresis Width (V)	Typical Current Consumption (μA)	Tolerance	Package
HT7022A-1	24V	2.2V	0.11	4	±3%	TO92, SOT25, SOT89
HT7024A-1	24V	2.4V	0.12	4	±3%	TO92, SOT25, SOT89
HT7027A-1	24V	2.7V	0.135	4	±3%	TO92, SOT25, SOT89
HT7033A-1	24V	3.3V	0.165	4	±3%	TO92, SOT25, SOT89
HT7039A-1	24V	3.9V	0.195	4	±3%	TO92, SOT25, SOT89
HT7044A-1	24V	4.4V	0.22	4	±3%	TO92, SOT25, SOT89
HT7050A-1	24V	5.0V	0.25	4	±3%	TO92, SOT25, SOT89

PFM Step-up DC/DC Converter (100mA)

Part No.	Input Voltage	Output Voltage	Output Current	Switching Frequency (kHz)	Typical Current Consumption I_{DD2} (μA)	Typical Efficiency	Package
HT7718	0.7V~6.0V	1.8V	100mA	115	4	80%	TO92, SOT23, SOT25, SOT89
HT7727	0.7V~6.0V	2.7V	100mA	115	4	85%	TO92, SOT23, SOT25, SOT89
HT7730	0.7V~6.0V	3.0V	100mA	115	4	85%	TO92, SOT23, SOT25, SOT89
HT7733	0.7V~6.0V	3.3V	100mA	115	4	85%	TO92, SOT23, SOT25, SOT89
HT7737	0.7V~6.0V	3.7V	100mA	115	4	85%	TO92, SOT23, SOT25, SOT89
HT7750	0.7V~6.0V	5.0V	100mA	115	4	85%	TO92, SOT23, SOT25, SOT89

PFM Step-up DC/DC Converter (200mA)

Part No.	Input Voltage	Output Voltage	Output Current	Switching Frequency (kHz)	Typical Current Consumption I_{DD2} (μA)	Typical Efficiency	Package
HT7727A	0.7V~6.0V	2.7V	200mA	200	5	85%	TO92, SOT23, SOT25, SOT89
HT7730A	0.7V~6.0V	3.0V	200mA	200	5	85%	TO92, SOT23, SOT25, SOT89
HT7733A	0.7V~6.0V	3.3V	200mA	200	5	85%	TO92, SOT23, SOT25, SOT89
HT7750A	0.7V~6.0V	5.0V	200mA	200	5	85%	TO92, SOT23, SOT25, SOT89

White LED Driver

Part No.	Input Voltage	Output Voltage	Frequency	Maximum Efficiency	Max. LED No.	Backlight Type	Brightness Control	Package
HT7937	2.5V~5.5V	< 24V	1.2MHz	85%	5	Single Series WLED	PWM/Analog DC	SOT26

Charge Pump DC/DC Converter

Part No.	VDD	Conversion Voltage	Typical Output Current (mA)	Typical Standby Current (μA)	Output Impedance	Package
HT7660	3V~12V	VDD ~ –VDD	20	80	60Ω	8DIP/SOP

Voice/Music

EasyVoice™

Part No.	VDD	Voice Capacity	Key (Max.)	Output (Max.)	D/A	Package
HT81003	2.4V~5.0V	3sec	2	2	PWM	16DIP
HT81006	2.4V~5.0V	6sec	8	2	PWM	16DIP
HT81R09 HT81009	2.4V~5.0V	9sec	8	2	PWM	16DIP
HT81012	2.4V~5.0V	12sec	8	2	PWM	16DIP
HT81R18 HT81018	2.4V~5.0V	18sec	8	2	PWM	16DIP
HT81R36	2.4V~5.0V	36sec	8	2	PWM	16DIP

Note: 1. Part Numbers including "R" are OTP devices while others are mask version devices.
2. For the HT81006 and HT81012, the higher voice capacity OTP devices are available for product development and verification purposes.
3. The PWM output is capable of directly driving an 8Ω speaker & piezoelectric buzzer.
4. EasyVoice™ is a trademark of Holtek Semiconductor Inc.

Q-Voice™

Part No.	VDD	Program Memory	Data Memory	Voice ROM	Voice Capacity	I/O	D/A	Package
HT83004	2.4V~5.0V	2K×15	80×8	8K×8	3sec	12	PWM	28SOP, 20SSOP(150mil/209mil)
HT83007	2.4V~5.0V	2K×15	80×8	16K×8	6sec	12	PWM	28SOP, 20SSOP(150mil/209mil)
HT83010	2.4V~5.0V	2K×15	80×8	24K×8	9sec	12	PWM	28SOP, 20SSOP(150mil/209mil)
HT83020	2.4V~5.0V	2K×15	80×8	48K×8	18sec	12	PWM	28SOP, 20SSOP(150mil/209mil)
HT83038	2.4V~5.0V	2K×15	80×8	96K×8	36sec	12	PWM	28SOP, 20SSOP(150mil/209mil)
HT83050	2.4V~5.0V	2K×15	80×8	128K×8	48sec	12	PWM	28SOP, 20SSOP(150mil/209mil)
HT83R074	2.4V~5.0V	2K×15	80×8	192K×8	72sec	12	PWM	28SOP, 20SSOP(209mil)
HT83074								28SOP, 20SSOP(150mil/209mil)

Note: 1. Part numbers including "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 PWM output is capable of directly driving an 8Ω speaker.
4. Q-Voice™ is a trademark of Holtek Semiconductor Inc.

Voice MCU

Part No.	VDD	Program Memory	Data Memory	Voice ROM	Voice Capacity	I/O	Timer		D/A	Stack	Package
							16-bit	RTC			
HT86030	2.4V~5.2V	8K×16	208×8	96K×8	36sec	16	2	—	12-bit×1ch	8	28SOP
HT86070	2.4V~5.2V	8K×16	208×8	192K×8	72sec	16	2	—	12-bit×1ch	8	28SOP
HT86072	2.4V~5.2V	8K×16	208×8	192K×8	72sec	23	3	√	12-bit×1ch	8	28SOP, 44/100QFP
HT86144	2.4V~5.2V	8K×16	208×8	384K×8	144sec	23	3	√	12-bit×1ch	8	28SOP, 44/100QFP
HT86R192 HT86192	2.4V~5.2V	8K×16	208×8	512K×8	192sec	23	3	√	12-bit×1ch	8	28SOP, 44/100QFP
HT86R384	2.4V~5.2V	8K×16	208×8	1024K×8	384sec	23	3	√	12-bit×1ch	8	28SOP
HT86384											28SOP, 100QFP
HT86576	2.4V~5.2V	8K×16	208×8	1536K×8	576sec	23	3	√	12-bit×1ch	8	32SOP, 100QFP
HT86768	2.4V~5.2V	8K×16	208×8	2048K×8	768sec	23	3	√	12-bit×1ch	8	32SOP, 100QFP

Note: 1. Part numbers including "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.

Enhanced Voice MCU

Part No.	VDD	Program Memory	Data Memory	Voice ROM	Voice Capacity	I/O	Timer		D/A	Stack	Package
							8-bit	16-bit			
HT86B10	2.4V~5.5V	8K×16	192×8	192K×8	72sec	16	3	—	12-bit×1	8	28SOP, 44/100QFP
HT86B20	2.4V~5.5V	8K×16	192×8	256K×8	96sec	16	3	—	12-bit×1	8	28SOP, 44/100QFP
HT86BR30 HT86B30	2.4V~5.5V	8K×16	192×8	384K×8	144sec	20	3	—	12-bit×1	8	28SOP, 44/100QFP
HT86B40	2.4V~5.5V	8K×16	384×8	512K×8	192sec	20	3	1	12-bit×1	8	28SOP, 44/100QFP
HT86B50	2.4V~5.5V	8K×16	384×8	768K×8	288sec	20	3	1	12-bit×1	8	28SOP, 44/100QFP
HT86BR60	2.4V~5.5V	8K×16	384×8	1024K×8	384sec	20	3	1	12-bit×1	8	28SOP
HT86B60											28SOP, 44/100QFP
HT86B70	2.4V~5.5V	8K×16	384×8	1536K×8	576sec	24	3	1	12-bit×1	8	44/100QFP
HT86B80	2.4V~5.5V	8K×16	384×8	2048K×8	768sec	24	3	1	12-bit×1	8	44/100QFP
HT86B90	3.3V~5.5V	8K×16	384×8	3072K×8	1152sec	24	3	1	12-bit×1	8	44/100QFP

Note: 1. Part numbers including "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.

Voice/Music

A/D Voice MCU

Part No.	VDD	Program Memory	Data Memory	Voice ROM	Voice Capacity	I/O	Timer		D/A	A/D	Stack	Package
							8-bit	RTC				
HT86A36*	2.2V~5.5V	8K×16	384×8	96K×8	36sec	40	4	√	12-bit×1	12-bit×4	8	44LQFP, 64LQFP(10x10mm)
HT86AR72* HT86A72*	2.2V~5.5V	8K×16	384×8	192K×8	72sec	40	4	√	12-bit×1	12-bit×4	8	44LQFP, 64LQFP(10x10mm)

* Under development, available in 2Q, 2008.

Note: 1. These devices are only available in OTP versions..
2. Evaluation kits are available for product development and verification purposes, please contact Holtek for further information.

Music MCU (4 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer	D/A	Speech	Package
HT36F2	2.4V~5.0V	32K×16	208×8	16	8-bit×2	16-bit×1	PCM	16/28SOP
HT36F6	2.4V~5.0V	64K×16	208×8	20	8-bit×2	16-bit×2	PCM	20/32SOP
HT36RFA HT36FA	2.4V~5.0V	128K×16	208×8	24	8-bit×2	16-bit×2	PCM	28/32SOP

Note: 1. Part numbers including "R" are OTP devices, all others are mask version devices.
2. The waveform data and program code share the same memory space.

Music MCU (8 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer	D/A	Speech	Package
HT36RA4 HT36A4	2.4V~5.0V	32K×16	208×8	8	8-bit×2	16-bit×1	PCM	16DIP/SOP
HT36A3	2.4V~5.0V	32K×16	208×8	20	8-bit×2	16-bit×1	PCM	28SOP, 48SSOP
HT36A2	2.4V~5.0V	64K×16	208×8	20	8-bit×2	16-bit×1	PCM	28SOP, 48SSOP
HT36RA1 HT36A1	2.4V~5.0V	64K×16	208×8	24	8-bit×2	16-bit×2	PCM	28SOP, 48SSOP

Note: 1. Part numbers including "R" are OTP devices, all others are mask version devices.
2. The waveform data and program code share the same memory space.

Music MCU (16 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer	D/A	Speech	Package
HT36RM4	2.6V~5.0V	64K×16	384×8	12	16-bit×2	16-bit×1	PCM	20DIP/SSOP(209mil)
HT36M4								20DIP/SSOP/TSSOP
HT36B4	2.4V~5.0V	64K×16	208×8	28	16-bit×2	16-bit×2	PCM	48SSOP
HT36B2	3.6V~5.0V	128K×16	512×8	32	16-bit×2	16-bit×2	PCM	28SOP, 56SSOP
HT36B0	3.6V~5.0V	256K×16	768×8	36	16-bit×2	16-bit×2	PCM	28SOP, 64LQFP

Note: 1. Part numbers including "R" are OTP devices, all others are mask version devices.
2. The waveform data and program code share the same memory space.

Enhanced Music MCU (4 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer		D/A	A/D	Speech	Power AMP	Package
					8-bit	16-bit					
HT37Q20	2.4V~5.5V	32K×16	320×8	16	2	1	16-bit×1	—	PCM/ADPCM	—	20SOP, 48SSOP
HT37Q30	2.4V~5.5V	64K×16	320×8	20	2	1	16-bit×1	—	PCM/ADPCM	√	28SOP, 48SSOP
HT37Q40	3.3V~5.5V	96K×16	320×8	24	2	1	16-bit×1	—	PCM/ADPCM	√	28SOP, 80LQFP
HT37Q50	3.3V~5.5V	128K×16	320×8	24	2	1	16-bit×1	—	PCM/ADPCM	√	28SOP, 80LQFP
HT37Q60	3.3V~5.5V	192K×16	320×8	28	2	1	16-bit×1	—	PCM/ADPCM	√	28SOP, 80LQFP
HT37Q70	3.3V~5.5V	256K×16	320×8	28	2	1	16-bit×1	—	PCM/ADPCM	√	28SOP, 80LQFP

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

Enhanced Music MCU (8 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer		D/A	A/D	Speech	Power AMP	Package
					8-bit	16-bit					
HT37A20	2.4V~5.5V	32K×16	320×8	16	2	1	16-bit×1	—	PCM/ADPCM	—	20SOP, 48SSOP
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	24	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP
HT37A50	3.3V~5.5V	128K×16	320×8	24	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP
HT37A60	3.3V~5.5V	192K×16	320×8	28	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP
HT37A70	3.3V~5.5V	256K×16	320×8	28	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP

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

Voice/Music

Enhanced Music MCU (16 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer		D/A	A/D	Speech	Power AMP	Package
					8-bit	16-bit					
HT37B50*	3.3V~5.5V	128K×16	768×8	32	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP
HT37B60*	3.3V~5.5V	192K×16	768×8	32	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP
HT37B70*	3.3V~5.5V	256K×16	768×8	32	2	1	16-bit×2	12-bit×8	PCM/ADPCM	√	28SOP, 80LQFP

* Under development, available in 4Q, 2008.

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

Enhanced ROMless Music MCU (16 Polyphony)

Part No.	VDD	Program Memory	Data Memory	I/O	Timer		D/A	A/D	Speech	Power AMP	Package
					8-bit	16-bit					
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.

Music Generator

Part No.	VDD	Polyphonic	Output	Demo Songs	Features	Package
HT3834	2.4V~5.0V	4	DAC	36	CPU/Manual Mode	16/28SOP
HT38A5	2.4V~5.0V	8	DAC	12	CPU/Manual Mode	16DIP, 20SOP

Piano

Part No.	VDD	Keys	Timbre	Rhythm	Demo Songs	Features	Package
HT3497	2.4V~5.0V	49/54	100	100	10	—	48SSOP
HT3617	3.6V~5.0V	61	100	100	12	LCD Display	56SSOP

Sound Effects

Part No.	Description	VDD	Command Input	Built-in VCO	Built-in RAM	Delay Time (ms)	Package
HT8950/HT8950A	Voice Changer	2.4V~4.0V	Manual	√	—	—	16/18DIP
HT8970	Voice Echo	4.5V~5.5V	Manual	√	20kb	30~330	16DIP/SOP
HT8972	Voice Echo	4.5V~5.5V	Manual	√	40kb	30~330	16DIP/SOP

Computer

16 Channel A/D MCU & SPI Interface

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	Ext. Interrupt	SPI	A/D	PWM	Stack	Package
HT82J30R HT82J30A	2.2V~5.5V	4MHz~12MHz	4K×15	216×8	35	1	2	2	8-bit×16	8-bit×1	6	28SKDIP/SOP, 44QFP
HT82J31A	2.2V~5.5V	4MHz~12MHz	4K×15	216×8	22	1	2	2	—	—	6	28SKDIP/SOP

Note: Part numbers including "A" are mask version devices while "R" are OTP devices.

I/O Type USB MCU with SPI (USB 1.1 Full Speed)

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		End Points	LVR	SPI	Stack	Package
						8-bit	16-bit	Ext.	Int.					
HT82A520R*	2.2V~5.5V	6MHz or 12MHz	4K×15	160×8	24	—	1	1	3	5	√	1	6	18SOP, 20/24/28SSOP
HT82A523R	3.3V~5.5V	6MHz or 12MHz	4K×15	192×8	40	1	1	1	5	4	√	2	6	32LQFP, 48SSOP, 52QFP

* Under development, available in 2Q, 2008.
Note: These devices are only available in OTP versions.

A/D Type USB MCU with SPI (USB 1.1 Full Speed)

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		End-points	A/D	PWM	SPI	Stack	Package
						16-bit	RTC	Ext.	Int.						
HT82A620R*	2.2V~5.5V	6MHz or 12MHz	4K×15	160×8	24	1	—	1	3	5	12-bit×16	8-bit×2	1	6	18SOP, 20/24/28SSOP
HT82A623R*	2.2V~5.5V	6MHz or 12MHz	4K×15	160×8	32	2	√	1	5	5	12-bit×16	8-bit×2	2	6	28SOP/SSOP, 44QFN

* Under development, available in 2Q, 2008.
Note: These devices are only available in OTP versions.

I/O Type MCU with USB Interface (USB 1.1 Low Speed)

Part No.	VDD	System Clock	Program Memory	Data Memory		Interface	I/O	Timer		End-points	Stack	Package
				SRAM	EEPROM			8-bit	16-bit			
HT82K94E HT82K94A	2.2V~5.5V	6MHz or 12MHz	6K×16	224×8	—	USB+PS/2	40	1	1	4	8	32QFN, 48SSOP
HT82K95E HT82K95A	3.3V~5.5V	6MHz or 12MHz	4K×15	160×8	—	USB+PS/2	32	1	1	3	8	28SOP, 32QFN, 48SSOP
HT82K95EE HT82K95AE					128×8							28SOP

Note: 1. Part numbers with a single "A" suffix are mask version devices, and with a single "E" suffix are OTP devices.
2. Part numbers with an "AE" suffix are mask version devices with EEPROM, and with an "EE" suffix are OTP devices with EEPROM.

Part No.	VDD	System Clock	Program Memory	Data Memory		Interface	I/O	Timer		End-points	Stack	Package
				SRAM	EEPROM			8-bit	16-bit			
HT82M99E HT82M99A	3.3V~5.5V	6MHz or 12MHz	2K×14	96×8	—	USB+PS/2	12	—	1	2	4	18DIP/SOP, 20DIP/SOP/SSOP
HT82M99EE HT82M99AE					128×8							20SSOP(209mil)
HT82M9AE HT82M9AA	3.3V~5.5V	6MHz or 12MHz	4K×15	224×8	—	USB+PS/2	16	—	1	3	4	20SOP/SSOP(209mil), 24SSOP(209mil), 32QFN
HT82M9AEE					128×8							20SSOP(209mil). 24SSOP(209mil)
HT82M9BE HT82M9BA	3.3V~5.5V	6MHz or 12MHz	8K×16	224×8	—	USB+PS/2	20	1	1	4	8	24SSOP(209mil), 28SSOP(209mil), 32QFN
HT82M9BEE					128×8							28SOP

Note: 1. Part numbers with a single "A" suffix are mask version devices, and with a single "E" suffix are OTP devices.
2. Part numbers with an "AE" suffix are mask version devices with EEPROM, and with an "EE" suffix are OTP devices with EEPROM.

A/D Type MCU with USB Interface (USB 1.1 Low Speed)

Part No.	VDD	System Clock	Program Memory	Data Memory	Interface	I/O	Timer		A/D	End-points	PWM	Stack	Package
							8-bit	16-bit					
HT82K96E HT82K96A	4.4V~5.5V	6MHz or 12MHz	4K×15	160×8	USB+PS/2	32	1	1	8-bit×6ch	3	—	8	28SOP, 48SSOP
HT82J97E HT82J97A	4.0V~5.5V	6MHz or 12MHz	2K×14	96×8	USB+PS/2	20	—	1	8-bit×6ch	2	8-bit×2	4	20/28SOP

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

I/O Type MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Interface	I/O	8-bit Timer	Stack	Package
HT82K68E-L HT82K68A-L	1.8V~5.5V	RC/Crystal	3K×16	160×8	PS/2	37	1	6	20/28SOP, 32QFN, 48SSOP

Note: 1. Part numbers including an "A" are mask version devices, and including an "E" are OTP devices.
2. Part numbers including an "L" are low voltage devices.

Computer

27MHz Keyboard/Mouse TX MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	16-bit Timer	Built-in DC/DC	27MHz AMP	Stack	Package
HT82M72E HT82M72A	2.0V~3.3V	27MHz	1K×14	96×8	17	1	√	√	2	20/28SOP, 28SSOP
HT82K72E HT82K72A	2.0V~3.3V	27MHz	2K×14	96×8	36	1	—	√	4	48SSOP

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

2.4GHz Keyboard/Mouse TX MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	16-bit Timer	Built-in DC/DC	SPI	Stack	Package
HT82M73E	2.0V~3.3V	4MHz~6MHz	2K×15	128×8	20	1	√	1	4	20SOP, 20/28SSOP
HT82K73E	2.0V~3.3V	4MHz~6MHz	2K×15	128×8	39	1	√	1	4	48SSOP

Note: These devices are only available in OTP versions.

Mouse

Part No.	Description	VDD	System Frequency	X/Y axis	Z axis	Package
HT82M39A	3-key 3D PS/2 mouse controller	4.75V~5.25V	2MHz	Photo, Ball 800 DPI Opto 400 DPI	Optomech/Mechanical	16DIP
HT82M398A	5-key 3D WIN2000 PS/2 mouse controller	4.75V~5.25V	2MHz	Photo, Ball 800 DPI Opto 400 DPI	Optomech/Mechanical	16DIP
HT82M35A HT82M35B HT82M35C HT82M35D HT82M35A-1 HT82M35B-1 HT82M35C-1 HT82M35D-1	3/5-key 3D PS/2 optical mouse controller (for Avago ADNS-5020)	4.0V~5.5V	2MHz	Avago Sensor Opto 500/1000 DPI	Optomech/Mechanical (Z axis/4/2)	16DIP
HT82M30A HT82M30B HT82M30C HT82M30D	3/5-key 3D PS/2 optical mouse controller (for Avago ADNS-2051/2610/2620)	4.0V~5.5V	2MHz	Avago Sensor Opto 400/800 DPI	Optomech/Mechanical (Z axis/4/2)	16DIP
HT82M32A HT82M32B	3/5-key 3D PS/2 optical mouse controller (for PixArt PAN101, PAN301, PAN3101)	4.0V~5.5V	2MHz	PixArt Sensor	Optomech/Mechanical (Z axis/4/2)	16DIP
HT82M98A	3-key 3D USB+PS/2 mouse controller	4.4V~5.25V	6MHz	Photo, Ball 800 DPI Opto 400 DPI	Optomech/Mechanical	18/20DIP
HT82M980A	5-key 3D WIN2000 USB+PS/2 mouse controller	4.4V~5.25V	6MHz	Photo, Ball 800 DPI Opto 400 DPI	Optomech/Mechanical	20DIP
HT82M21A	3-key 3D USB+PS/2 optical mouse controller (for Avago ADNS-2051/2610/2620)	4.4V~5.25V	6MHz	Avago Sensor Opto 400/800 DPI	Optomech/Mechanical (Z axis/4/2)	18DIP
HT82M22A	5-key 3D USB+PS/2 optical mouse controller (for Avago ADNS-2051/2610/2620)	4.4V~5.25V	6MHz	Avago Sensor Opto 400/800 DPI	Optomech/Mechanical (Z axis/4/2)	20DIP
HT82M23A HT82M23B HT82M23C	3/5-key USB+PS/2 or USB only optical mouse controller (for Avago ADNS-2051/2610/2620)	4.4V~5.25V	6MHz	Avago Sensor Opto 400/800 DPI	Optomech/Mechanical (Z axis/4/2)	18/20DIP/SOP
HT82M25A HT82M25B HT82M25C HT82M25A-1 HT82M25B-1 HT82M25C-1	3/5-key USB+PS/2 or USB only optical mouse controller (for Avago ADNS-5020)	4.4V~5.25V	6MHz	Avago Sensor Opto 500/1000 DPI	Optomech/Mechanical (Z axis/4/2)	18/20DIP/SOP
HT82M28A	3/5-key USB optical mouse controller for VISTA (for Avago ADNS-5020/2610/2620, for PixArt PAN3101)	4.4V~5.25V	6MHz	PixArt Sensor, Avago Sensor Opto 400/500/800/1000/1600 DPI	Optomech/Mechanical (Z axis/2)	20DIP/SOP

Keyboard

Part No.	Description	VDD	Oscillator	Interface	Package
HT82K628A	WIN2000 KB	4.75V~5.25V	RC	PS/2	40DIP, 48SSOP
HT82K629A	WIN2000 KB	4.75V~5.25V	Crystal	USB+PS/2	40DIP, 48SSOP

Communication

I/O Type Phone MCU

Part No.	VDD	Program Memory	Data Memory	General I/O	Dialer I/O	Timer	External Interrupt	Stack	DTMF Generator	Package
HT95A100 HT95A10P	2.4V~5.5V	4K×16	384×8	18	2	16-bit×2	3	4	√	28SOP
HT95A200 HT95A20P	2.4V~5.5V	4K×16	1152×8	28	8	16-bit×2	4	8	√	48SSOP
HT95A300 HT95A30P	2.4V~5.5V	8K×16	2112×8	28	8	16-bit×2	4	8	√	48SSOP
HT95A400 HT95A40P	2.4V~5.5V	16K×16	2880×8	44	8	16-bit×2	4	12	√	64LQFP
HT95R22	2.2V~5.5V	4K×16	576×8	20	—	16-bit×2	2	8	√	28SOP
HT95R23	2.2V~5.5V	4K×16	1152×8	36	—	16-bit×2	4	8	√	48SSOP
HT95R24	2.2V~5.5V	8K×16	2112×8	36	—	16-bit×2	4	8	√	48SSOP
HT95R25*	2.2V~5.5V	16K×16	2112×8	52	—	16-bit×2	4	8	√	64LQFP

* Under development, available in 4Q, 2008.

Note: Part numbers suffixed with "P" or which include an "R" are OTP devices, all others are mask version devices.

I/O Type Phone MCU with DTMF Receiver

Part No.	VDD	Program Memory	Data Memory	General I/O	Timer	External Interrupt	SPI	Stack	DTMF Receiver	DTMF Generator	Package
HT95R33	2.2V~5.5V	4K×16	1152×8	28	16-bit×2	4	—	8	√	√	48SSOP
HT95R34	2.2V~5.5V	8K×16	2112×8	28	16-bit×2	4	—	8	√	√	48SSOP
HT95R35*	2.2V~5.5V	16K×16	2112×8	44	16-bit×3	4	√	8	√	√	64LQFP

* Under development, available in 4Q, 2008.

Note: These devices are only available in OTP versions.

LCD Type Phone MCU

Part No.	VDD	Program Memory	Data Memory	General I/O	Dialer I/O	LCD	Timer	External Interrupt	Stack	DTMF Generator	Package
HT95L000 HT95L00P	2.4V~5.5V	4K×16	384×8	14~18	6	12×8 ~ 16×8	16-bit×2	3	4	√	56SSOP
HT95L100 HT95L10P	2.4V~5.5V	4K×16	1152×8	16~20	8	16×8 ~ 20×8	16-bit×2	4	8	√	64LQFP
HT95L200 HT95L20P	2.4V~5.5V	8K×16	1152×8	20~28	8	24×8 ~ 24×16	16-bit×2	4	8	√	100QFP
HT95L300 HT95L30P	2.4V~5.5V	8K×16	2112×8	16~28	8	36×16 ~ 48×16	16-bit×2	4	8	√	100QFP
HT95L400 HT95L40P	2.4V~5.5V	16K×16	2880×8	28~40	8	36×16 ~ 48×16	16-bit×2	4	12	√	128QFP

Note: Part numbers suffixed with "P" are OTP devices, all others are mask version devices.

CID Type Phone MCU

Part No.	VDD	Program Memory	Data Memory	General I/O	Dialer I/O	LCD	Timer	External Interrupt	Stack	DTMF Generator	FSK Receiver	Package
HT95C200 HT95C20P	2.4V~5.5V	8K×16	1152×8	20~28	8	24×8 ~ 24×16	16-bit×2	4	8	√	√	128QFP
HT95C300 HT95C30P	2.4V~5.5V	8K×16	2112×8	16~28	8	36×16 ~ 48×16	16-bit×2	4	8	√	√	128QFP
HT95C400 HT95C40P	2.4V~5.5V	16K×16	2880×8	28~40	8	36×16 ~ 48×16	16-bit×2	4	12	√	√	128QFP

Note: Part numbers suffixed with "P" are OTP devices, all others are mask version devices.

Telecom Peripheral

Part No.	Description	VDD	OSC Frequency	Package
HT9200A HT9200B	DTMF generator	2.5V~5.5V	3.58MHz	8DIP/SOP 14SOP
HT9170B HT9170D	DTMF receiver	2.5V~5.5V	3.58MHz	18DIP 18SOP
HT9172	DTMF receiver	2.5V~5.5V	3.58MHz	18DIP/SOP
HT9020B	Call progress tone detector	2.5V~5.5V	32768Hz	8DIP/SOP
HT9032C HT9032D	FSK decoder	3.5V~5.5V	3.58MHz	16DIP/SOP 8DIP/SOP
HT9033	CAS tone detector	3.5V~5.5V	3.58MHz	16DIP/SOP

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

Communication

Basic Dialer

Part No.	VDD	Mem. No.	Hand Free	Hold Line	LCD Interface	Key-tone	On-hook Store	Flash Mode	Package	Remark
HT93214A	2.0V~5.5V	1	—	—	—	—	—	C	16DIP	Minimum flash time=300ms
HT93214B	2.0V~5.5V	1	√	—	—	—	—	C	18DIP	Minimum flash time=300ms
HT93214AT	2.0V~5.5V	1	—	—	—	√	—	C	18DIP	Minimum flash time=300ms
HT9302G	2.0V~5.5V	1	—	—	—	—	—	D/C	16DIP	—
HT9302A	2.0V~5.5V	2	—	—	—	—	—	D/C	18DIP	—
HT9302B	2.0V~5.5V	2	√	√	—	—	—	D/C	22SKDIP	—
HT9302C	2.0V~5.5V	2	—	—	√	—	—	D/C	20DIP	—
HT9302D	2.0V~5.5V	2	√	√	√	—	—	D/C	24SKDIP	—
HT9320B	2.0V~5.5V	22	√	√	√	—	—	D/C	28DIP	—
HT9320C	2.0V~5.5V	22	—	—	—	—	—	D/C	22SKDIP	—

Analog

D/A Converter

Part No.	Description	VDD	Package
HT82V731	16-bit stereo audio D/A converter	2.4V~5.5V	8SOP
HT82V737	16-bit stereo audio D/A converter with earphone driver	2.4V~5.5V	16NSOP
HT82V738	24-bit stereo audio D/A converter	3V~5V	16NSOP

Amplifier

Part No.	Description	VDD	Output Power	Mute/Shutdown Function	Package
HT9274	Quad micropower op amp	1.6V~5.5V	—	—	14DIP/SOP
HT82V732	Stereo audio power amp	3V~5.5V	60mW into 32Ω	—	8SOP
HT82V733	Mono audio power amp	2.4V~5.5V	400mW into 8Ω	√	8DIP/SOP
HT82V735	Stereo audio power amp with shutdown	2.4V~6V	330mW into 32Ω	√	8SOP
HT82V736	Stereo audio power amp with mute	2.4V~6V	65mW into 32Ω	√	8SOP
HT82V739	1200mW Mono audio power amp with shutdown	2.2V~5.5V	1200mW into 8Ω	√	8DIP/SOP

Video

CCD/CIS Analog Signal Processor

Part No.	Application Field	VDD	AVDD	Input Channel	A/D (Bit)	MSPS	Full Scale	Power Consumption	Package
HT82V24	CCD/CIS Scanner / MFP	3.0V~5.25V	4.75V~5.25V	3 (2/1)	16	15	2V/3V	400mW	20SOP/SSOP(209mil), 28SOP/SSOP(209mil)
HT82V26A	CCD/CIS Scanner / MFP	3.0V~5.25V	4.75V~5.25V	3 (2/1)	16	30	2V	400mW	28SOP/SSOP(209mil)
HT82V36	Bus (USB) Power CIS Scanner	3.0V~3.6V	3.0V~3.6V	1	16	6	1.4V	56mW	28SSOP(209mil)
HT82V842A	CCD Surveillance/DSC System	2.7V~3.6V	2.7V~3.6V	1	10	20	1.0V	70mW	48LQFP

CCD Vertical Driver

Part No.	Application Field	VDD	VH	VL	VH–VL (Max.)	Channel Output			Package
						3-Level	2-Level	Shutter	
HT82V805	CCD Surveillance/DSC System	3.0V~5.5V	14.5V~15.5V	–9.5V ~ –7.5V	24V	2	2	1	16SSOP, 16/20TSSOP
HT82V806	CCD Surveillance/DSC System	3.0V~5.5V	12V~20V	–10V ~ –5V	27V	4	2	1	24SSOP

Image Signal Processor

Part No.	Application Field	VDD	CCD Sensor Input	Major Function	Video Output	Package
HT82V862R	CCD Surveillance/ Vehicle Camera System	3.0V~3.6V	NTSC/PAL 270K/320K/410K/470K pixels	Color image signal processor, TV encoder, video DAC with 8 patents pending	NTSC/PAL S-Video/CVBS	80LQFP

Miscellaneous

Timepiece

Part No.	VDD	Operating Current (μA)	Main Function	Standby Current (μA)	External X'tal Osc.	Package
HT1380 HT1381	2.0V~5.5V	1.2	Time Keeper	0.1	32.768kHz	8DIP 8SOP
HT13R90	2.2V~5.5V	5	Programmable Timer	1	32.768kHz	8DIP/SOP

Clinical Thermometer

Part No.	VDD	Measurement Range	Resolution	Detect Stable Time	Auto Power Off
HT7500	1.3V~1.65V	32°C~42°C	0.1°C	16sec	√
HT7501	1.3V~1.65V	32°C~43°C	0.01°C	8sec	√

Camera Peripheral

Part No.	Description	VDD	Operating Current	Standby Current	Package
HT6751A HT6751B	Motor Driver	2.0V~6.0V	—	<2μA at 5V	8SOP

PIR Controller

Part No.	VDD	ZC Off/On for Override	Flash on Mode Auto-change	Override On Duration	Comparator Window	Effective Trigger Width	Package
HT7610A HT7610B	5V~12V	2 times	Flash	8 hrs	$\frac{1}{16}(V_{DD}-V_{EE})$	>24ms	16DIP
HT7611A HT7611B	5V~12V	1 time	No flash	8 hrs	$\frac{1}{16}(V_{DD}-V_{EE})$	>24ms	16DIP

Note: Part numbers suffixed with A are for Relay application while those suffixed with B are for Triac application.

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.

HT-IDE3000 Development Environment

The HT-IDE3000 is a fully integrated development system for the Holtek range of microcontrollers. Working in conjunction with the HT-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 software functions of the development system include a user-friendly windows based workbench which integrates together functions such as program editor, cross assembler, linker and library manager. An additional feature of the system is its software simulation mode which enables the system to run without connection to the HT-ICE emulator hardware.

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

Designed to work under the HT-IDE3000 Development Environment, Holtek has also developed a range of hardware In-circuit Emulators, known as the HT-ICE. These hardware emulators are capable of simulating the Holtek 8-bit microcontroller devices in real-time and contain all the features one would expect from a high functioning development system such as logical breakpoints, full trace facilities, single stepping etc., a range of features which combine to ensure rapid debug during application development.

An additional feature of most of the hardware emulators is their integrated device programmer. This feature allows for easy and rapid programming of OTP and Flash type devices without the need for an additional programmer providing the designer with an all-in-one integrated hardware and software tool package. A range of adapter cards is also available for the HT-ICE integrated programmer to ensure that all package types can be conveniently programmed.

HT-ICE — Holtek In-Circuit Emulator

Product Code	Device Type	Device Part No.	Product Contents
CICE48C00CCF	Cost-Effective I/O	HT48R05A-1, HT48C05, HT48R062, HT48C062, HT48R06A-1, HT48C06, HT48R07A-1, HT48R08A-1, HT48R09A-1	HT-ICE, CD, 5 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB48MIO0001A), OTP Adapter (CADPDIP40A)
	I/O	HT48R10A-1, HT48C10-1, HT48R30A-1, HT48C30-1, HT48R50A-1, HT48C50-1, HT48R502, HT48R70A-1, HT48C70-1	
	Remote	HT48RA0-2, HT48CA0-2, HT48RA0-1, HT48CA0-1, HT48RA1, HT48CA1, HT48RA3, HT48CA3	
CICE48E000004A	Cost-Effective I/O	HT48R05A-1, HT48C05, HT48R062, HT48C062, HT48R06A-1, HT48C06, HT48R07A-1, HT48R08A-1, HT48R09A-1, HT48R0AA-1	HT-ICE, CD, 6 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB48E000004A), OTP Adapter (CADPDIP40A)
	I/O	HT48R10A-1, HT48C10-1, HT48R30A-1, HT48C30-1, HT48R50A-1, HT48C50-1, HT48R502, HT48R70A-1, HT48C70-1	
	I/O Flash	HT48F06E, HT48F10E, HT48F30E, HT48F50E, HT48F70E	
	Remote	HT48RA0-2, HT48CA0-2, HT48RA0-1, HT48CA0-1, HT48RA1, HT48CA1, HT48RA3, HT48CA3, HT48RA5, HT48CA5	
CICE48U000006A	Cost-Effective I/O	HT48R05A-1, HT48C05, HT48R062, HT48C062, HT48R06A-1, HT48C06, HT48R07A-1, HT48R08A-1, HT48R09A-1	HT-ICE, CD, 6 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB48E000004A), OTP Adapter (CADPDIP40A)
	I/O	HT48R10A-1, HT48C10-1, HT48R30A-1, HT48C30-1, HT48R50A-1, HT48C50-1, HT48R502, HT48R70A-1, HT48C70-1, HT48RU80, HT48CU80	
	I/O Flash	HT48F06E, HT48F10E, HT48F30E, HT48F50E, HT48F70E	
	Remote	HT48RA0-2, HT48CA0-2, HT48RA0-1, HT48CA0-1, HT48RA1, HT48CA1, HT48RA3, HT48CA3, HT48RA5, HT48CA5	
CICE48R030006A	Small Package I/O	HT48R01A, HT48R02, HT48R03	HT-ICE, CD, 1 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB48R030006A)
	Small Package A/D	HT46R01A, HT46R02, HT46R03	
CICE48R52A006A	I/O with 16×16 High Current LED Driver	HT48R52A, HT48R54A	HT-ICE, CD, 1 Flat Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB48R52A006A)
CICE49C00CCAA	LCD	HT49R10A-1, HT49C10-1, HT49R30A-1, HT49C30-1, HT49C30L, HT49R50A-1, HT49C50-1, HT49C50L, HT49R70A-1, HT49C70-1, HT49C70L	HT-ICE, CD, 3 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB49C000001A), OTP Adapter (CADPDIP40A)
CICE49U000006A		HT49R10A-1, HT49C10-1, HT49R30A-1, HT49C30-1, HT49C30L, HT49R50A-1, HT49C50-1, HT49C50L, HT49R70A-1, HT49C70-1, HT49C70L, HT49RU80, HT49CU80	HT-ICE, CD, 3 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB49C000001B), OTP Adapter (CADPDIP40A)

HT-ICE — Holtek In-Circuit Emulator			
Product Code	**Device Type**	**Device Part No.**	**Product Contents**
CICE46C00CCEB	Cost-Effective A/D	HT46R46, HT46C46, HT46R47, HT46C47, HT46R48A, HT46R49	HT-ICE, CD, 6 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46SER0001B), OTP Adapter (CADPDIP40A)
	A/D	HT46R22, HT46C22, HT46R23, HT46C23, HT46R232, HT46C232, HT46R24, HT46C24, HT46R46-H, HT46R47-H, HT46R51A, HT46R52A, HT46R53A, HT46R54A	
	A/D with LCD	HT46R62, HT46C62, HT46R63, HT46C63, HT46R64, HT46C64, HT46R65, HT46C65	
CICE46C00CCEC	Cost-Effective A/D	HT46R46, HT46C46, HT46R46E, HT46C46E, HT46R47, HT46C47, HT46R47E, HT46C47E, HT46R48A, HT46R48AE, HT46R49, HT46R49E, HT46R4A, HT46R4AE	HT-ICE, CD, 6 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46SER0001B), OTP Adapter (CADPDIP40B)
	A/D	HT46R22, HT46C22, HT46R23, HT46C23, HT46R232, HT46C232, HT46R24, HT46C24, HT46R46-H, HT46R47-H, HT46R51A, HT46R52A, HT46R53A, HT46R54A	
	A/D with LCD	HT46R62, HT46C62, HT46R63, HT46C63, HT46R64, HT46C64, HT46R65, HT46C65	
CICE46C00CCED	Cost-Effective A/D	HT46R46, HT46C46, HT46R46E, HT46C46E, HT46R47, HT46C47, HT46R47E, HT46C47E, HT46R48A, HT46R48AE, HT46R49, HT46R49E, HT46R4A, HT46R4AE	HT-ICE, CD, 6 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46SER0001B), OTP Adapter (CADPDIP40B)
	A/D	HT46R22, HT46C22, HT46R23, HT46C23, HT46R232, HT46C232, HT46R24, HT46C24, HT46R46-H, HT46R47-H, HT46R51A, HT46R52A, HT46R53A, HT46R54A	
	A/D with UART	HT46RU22, HT46RU232, HT46RU24, HT46RU25, HT46CU25, HT46RU26	
	A/D with OPA	HT46R32, HT46R322, HT46R34, HT46R342	HT-ICE, CD, 6 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46SER0001B), OTP Adapter (CADPDIP40B) Note that for these devices it is also necessary to obtain the additional Interface Card (CPCB46R342006A), 2 Flat Cables
	A/D with LCD	HT46R62, HT46C62, HT46R63, HT46C63, HT46R64, HT46C64, HT46R65, HT46C65, HT46R652, HT46RU66, HT46CU66	HT-ICE, CD, 6 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46SER0001B), OTP Adapter (CADPDIP40B)
	C/R-F	HT45R36, HT45R38	HT-ICE, CD, 4 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB45R380006B), OTP Adapter (CADPDIP40B)
		HT45R35	HT-ICE, CD, 4 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB45R350007A), OTP Adapter (CADP40DIP-T)
CICE46F000007A	Cost-Effective A/D	HT46R46, HT46C46, HT46R46E, HT46C46E, HT46R47, HT46C47, HT46R47E, HT46C47E, HT46R48A, HT46R48AE, HT46R49, HT46R49E, HT46R4A, HT46R4AE	HT-ICE, CD, 5 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46SER0001D), OTP Adapter (CADPDIP40B)
	A/D	HT46R22, HT46C22, HT46R23, HT46C23, HT46R232, HT46C232, HT46R24, HT46C24, HT46R46-H, HT46R47-H, HT46R51A, HT46R52A, HT46R53A, HT46R54A	
	A/D with UART	HT46RU22, HT46RU232, HT46RU24, HT46RU25, HT46CU25, HT46RU26	
	A/D Flash	HT46F46E, HT46F47E, HT46F48E, HT46F49E	
	A/D with OPA	HT46R32, HT46R322, HT46R34, HT46R342	HT-ICE, CD, 6 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46SER0001D), OTP Adapter (CADPDIP40B) Note that for these devices it is also necessary to obtain the additional Interface Card (CPCB46R342006A), 2 Flat Cables
	C/R-F	HT45R36, HT45R38	HT-ICE, CD, 4 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB45R380006B), OTP Adapter (CADPDIP40B)
		HT45R35	HT-ICE, CD, 4 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB45R350007A), OTP Adapter (CADP40DIP-T)
CICE46L000007A	Cost-Effective A/D	HT46R46, HT46C46, HT46R46E, HT46C46E, HT46R47, HT46C47, HT46R47E, HT46C47E, HT46R48A, HT46R48AE, HT46R49, HT46R49E, HT46R4A, HT46R4AE	HT-ICE, CD, 6 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46SER0001D), OTP Adapter (CADPDIP40B)
	A/D	HT46R22, HT46C22, HT46R23, HT46C23, HT46R232, HT46C232, HT46R24, HT46C24, HT46R46-H, HT46R47-H, HT46R51A, HT46R52A, HT46R53A, HT46R54A	
	A/D with LCD	HT46R62, HT46C62, HT46R63, HT46C63, HT46R64, HT46C64, HT46R65, HT46C65, HT46R652, HT46RU66, HT46CU66, HT46RU67, HT46CU67	
	A/D with UART	HT46RU22, HT46RU232, HT46RU24, HT46RU25, HT46CU25, HT46RU26	
	A/D with OPA	HT46R32, HT46R322, HT46R34, HT46R342	HT-ICE, CD, 6 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46SER0001D), OTP Adapter (CADPDIP40B) Note that for these devices it is also necessary to obtain the additional Interface Card (CPCB46R342006A), 2 Flat Cables
	C/R-F	HT45R36, HT45R38	HT-ICE, CD, 4 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB45R380006B), OTP Adapter (CADPDIP40B)
		HT45R35	HT-ICE, CD, 4 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB45R350007A), OTP Adapter (CADP40DIP-T)
CICE46R940007A	A/D with 16X16 High Current LED Driver	HT46R92, HT46R94	HT-ICE, CD, 2 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46R940007A)
CICE46R14A007A	A/D with Comparator	HT46R12A, HT46R14A, HT46R321	HT-ICE, CD, 3 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46R14A007A), OTP Adapter (CADPDIP40A)

HT-ICE — Holtek In-Circuit Emulator			
Product Code	**Device Type**	**Device Part No.**	**Product Contents**
CICE46RS03007A	A/D with Multiple OPA & Comparator	HT46RS03, HT46RS03P	HT-ICE, CD, 3 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46RS03007A),
CICE56R640007A	TinyPowe™ A/D	HT56R64	HT-ICE, CD, 3 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB56R640007A),
CICE46R73D006A	Dual Slope A/D with LCD	HT46R71D-1, HT46R72D-1, HT46R73D-1, HT46R74D-1, HT46RU75D-1	HT-ICE, CD, 2 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46R73D006A),
CICE82J300006A	16 Channel A/D with SPI Interface	HT82J30R, HT82J30A	HT-ICE, CD, 2 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB82J300006A), OTP Adapter (CADPDIP40A)
CICE46RB70005A	A/D USB	HT46RB50, HT46RB70	HT-ICE, CD, 4 Flat Cables, USB Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46RB70005A), OTP Adapter (CADPDIP40A)
CICE46RB70005B	A/D USB	HT46RB50, HT46RB70	HT-ICE, CD, 3 Flat Cables, USB Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB46RB70005B), OTP Adapter (CAFP46RB7DI28A)
CICE82K680004A	I/O	HT82K68E-L	HT-ICE, CD, 5 Flat Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB82K680004A), OTP Adapter (CADPDIP40A)
CICE82K960004A	I/O with USB Interface	HT82K94E, HT82K94A, HT82K95E, HT82K95A, HT82K95EE, HT82K95AE	HT-ICE, CD, 4 Flat Cable, USB Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB82K960004D), OTP Adapter (CADP82K96DI40A)
	A/D with USB Interface	HT82K96E, HT82K96A	
CICE82M990004A	I/O with USB Interface	HT82M99E, HT82M99A, HT82M99EE, HT82M99AE	HT-ICE, CD, 5 Flat Cable, USB Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB82M990004A), OTP Adapter (CADP82J97DI28A)
	A/D with USB Interface	HT82J97E, HT82J97A	
CICE82M990004B	I/O with USB Interface	HT82M99E, HT82M99A, HT82M99EE, HT82M99AE, HT82M9AE, HT82M9AA, HT82M9AEE, HT82M9BE, HT82M9BA, HT82M9BEE	HT-ICE, CD, 5 Flat Cable, USB Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB82M990004C), OTP Adapter (CADP82J97DI28A)
	A/D with USB Interface	HT82J97E, HT82J97A	
CICE82K730006A	27MHz Keyboard/Mouse TX	HT82M72E, HT82M72A, HT82K72E, HT82K72A	HT-ICE, CD, 3 Flat Cable, Power Adapter, Power Cord, Printer Cable, Interface Card(CPCB82K730006A)
	2.4GHz Keyboard/Mouse TX	HT82M73E, HT82K73E	
CICE47R200005A	R-F Type	HT47R10A-1, HT47C10-1, HT47R20A-1, HT47C20-1, HT47C20L	HT-ICE, CD, Flat Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB47R200005A), 2 R-F A/D Converter (RFADOSC-1, RFADOSC-2), OTP Adapter (CADPDIP40A)
CICE47C10L006A		HT47C06L, HT47C10L	HT-ICE, CD, Flat Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB47C10L006A), OTP Adapter (CADPDIP40A)
CICE45RM03006A	Bruchless DC Motor	HT45RM03A	HT-ICE, CD, Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB45RM03006A), OTP Adapter (CADPDIP40A)
CICE48RA03005A	Remote	HT48RA0-3, HT48CA0-3	HT-ICE, CD, Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB48RA03005A)
CICE49RA00006A	Remote with LCD	HT49RA0, HT49CA0	HT-ICE, CD, Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB49RA00006A)
CICE49RA10007A		HT49RA1, HT49CA1	HT-ICE, CD, Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB49RA10007A)
CICE82A822005A	USB Audio	HT82A821R, HT82A822R	HT-ICE, CD, Flat Cable, USB Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB82A822005A), OTP Adapter (CADPDIP40A)
CICE82A832005A		HT82A834R, HT82A850R, HT82A851R	HT-ICE, CD, Flat Cable, USB Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB82A832005A), OTP Adapter (CADPDIP40A)
CICE950000005A	I/O Type Phone	HT95A100, HT95A10P, HT95A200, HT95A20P, HT95A300, HT95A30P, HT95A400, HT95A40P	HT-ICE, CD, 2 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB950000005A), OTP Adapter (CADPDIP40A)
	LCD Type Phone	HT95L000, HT95L00P, HT95L100, HT95L10P, HT95L200, HT95L20P, HT95L300, HT95L30P, HT95L400, HT95L40P	
	CID Type Phone	HT95C200, HT95C20P, HT95C300, HT95C30P, HT95C400, HT95C40P	
CICE95R3X0008A	I/O Type Phone	HT95R23, HT95R33	HT-ICE, CD, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB95R3X0008B)
CICE860000004A	Voice	HT86030, HT86070, HT86072, HT86144, HT86R192, HT86192, HT86R384, HT86384, HT86576, HT86768	HT-ICE, CD, Flat Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (CPCB860000004A), OTP Adapter (CADPDIP40A)
	Q-Voice™	HT83004, HT83007, HT83010, HT83020, HT83038, HT83050, HT83R074, HT83074	

HT-ICE Interface Card

The HT-ICE Interface Card is a Printed Circuit Board that plugs into connectors on the front of the HT-ICE and forms the interface between the HT-ICE hardware and the user's application hardware. As the interface card provides sockets for some MCU package types, crystals and RC and oscillator external connections etc, designers are provided with a way to easily connect up their application hardware during the development stage.

The following list shows the cross-reference between the interface card number and the Holtek device part number. Note that the HT-ICE package, as well as containing a relevant Interface Card, also contains a collection of flat cable connectors to assist with easy connection between interface card and the application hardware for various package types.

HT-ICE Interface Card

Product Code	Supported Devices	HT-ICE Type No.
CPCB48MIO0001A	HT48R05A-1, HT48C05, HT48R062, HT48C062, HT48R06A-1, HT48C06, HT48R07A-1, HT48R08A-1, HT48R09A-1, HT48R10A-1, HT48C10-1, HT48R30A-1, HT48C30-1, HT48R50A-1, HT48C50-1, HT48R502, HT48R70A-1, HT48C70-1, HT48RA0-2, HT48CA0-2, HT48RA0-1, HT48CA0-1, HT48RA1, HT48CA1, HT48RA3, HT48CA3	CICE48C00CCF
CPCB48E000004A	HT48F06E, HT48F10E, HT48F30E, HT48F50E, HT48F70E, HT48R05A-1, HT48C05, HT48R062, HT48C062, HT48R06A-1, HT48C06, HT48R07A-1, HT48R08A-1, HT48R09A-1, HT48R10A-1, HT48C10-1, HT48R30A-1, HT48C30-1, HT48R50A-1, HT48C50-1, HT48R502, HT48R70A-1, HT48C70-1, HT48RA0-2, HT48CA0-2, HT48RA0-1, HT48CA0-1, HT48RA1, HT48CA1, HT48RA3, HT48CA3, HT48RA5, HT48CA5	CICE48E000004A
	HT48F06E, HT48F10E, HT48F30E, HT48F50E, HT48F70E, HT48R05A-1, HT48C05, HT48R062, HT48C062, HT48R06A-1, HT48C06, HT48R07A-1, HT48R08A-1, HT48R09A-1, HT48R10A-1, HT48C10-1, HT48R30A-1, HT48C30-1, HT48R50A-1, HT48C50-1, HT48R502, HT48R70A-1, HT48C70-1, HT48RA0-2, HT48CA0-2, HT48RA0-1, HT48CA0-1, HT48RA1, HT48CA1, HT48RA3, HT48CA3, HT48RA5, HT48CA5, HT48RU80, HT48CU80	CICE48U000006A
CPCB48E000004B	HT48F06E, HT48F10E, HT48F30E, HT48F50E, HT48F70E, HT48R05A-1, HT48C05, HT48R062, HT48C062, HT48R06A-1, HT48C06, HT48R07A-1, HT48R08A-1, HT48R09A-1, HT48R10A-1, HT48C10-1, HT48R30A-1, HT48C30-1, HT48R50A-1, HT48C50-1, HT48R502, HT48R70A-1, HT48C70-1, HT48RA0-2, HT48CA0-2, HT48RA0-1, HT48CA0-1, HT48RA1, HT48CA1, HT48RA3, HT48CA3, HT48RA5, HT48CA5	CICE48E000004A
	HT48F06E, HT48F10E, HT48F30E, HT48F50E, HT48F70E, HT48R05A-1, HT48C05, HT48R062, HT48C062, HT48R06A-1, HT48C06, HT48R07A-1, HT48R08A-1, HT48R09A-1, HT48R10A-1, HT48C10-1, HT48R30A-1, HT48C30-1, HT48R50A-1, HT48C50-1, HT48R502, HT48R70A-1, HT48C70-1, HT48RA0-2, HT48CA0-2, HT48RA0-1, HT48CA0-1, HT48RA1, HT48CA1, HT48RA3, HT48CA3, HT48RA5, HT48CA5, HT48RU80, HT48CU80	CICE48U000006A
CPCB48E000004C	HT48R0AA-1	CICE48E000004A
CPCB48R030006A	HT48R01A, HT48R02, HT48R03, HT46R01A, HT46R02, HT46R03	CICE48R030006A
CPCB48R52A006A	HT48R52A, HT48R54A	CICE48R52A006A
CPCB49C000001A	HT49R10A-1, HT49C10-1, HT49R30A-1, HT49C30-1, HT49C30L, HT49R50A-1, HT49C50-1, HT49C50L, HT49R70A-1, HT49C70-1, HT49C70L	CICE49C00CCAA
CPCB49C000001B	HT49R10A-1, HT49C10-1, HT49R30A-1, HT49C30-1, HT49C30L, HT49R50A-1, HT49C50-1, HT49C50L, HT49R70A-1, HT49C70-1, HT49C70L, HT49RU80, HT49CU80	CICE49U000006A
CPCB46SER0001B	HT46R22, HT46C22, HT46R23, HT46C23, HT46R232, HT46C232, HT46R24, HT46C24, HT46R46, HT46C46, HT46R46E, HT46C46E, HT46R46-H, HT46R47, HT46C47, HT46R47E, HT46C47E, HT46R47-H, HT46R48A, HT46R48AE, HT46R51A, HT46R52A, HT46R53A, HT46R54A, HT46R62, HT46C62, HT46R63, HT46C63, HT46R64, HT46C64, HT46R65, HT46C65	CICE46C00CCEB CICE46C00CCEC
	HT46R22, HT46C22, HT46R23, HT46C23, HT46R232, HT46C232, HT46R24, HT46C24, HT46R46, HT46C46, HT46R46E, HT46C46E, HT46R46-H, HT46R47, HT46C47, HT46R47E, HT46C47E, HT46R47-H, HT46R48A, HT46R48AE, HT46R49, HT46R49E, HT46R51A, HT46R52A, HT46R53A, HT46R54A, HT46R62, HT46C62, HT46R63, HT46C63, HT46R64, HT46C64, HT46R65, HT46C65, HT46R652, HT46RU22, HT46RU232, HT46RU24, HT46RU25, HT46CU25, HT46RU26, HT46RU66, HT46CU66	CICE46C00CCED
	HT46R4A, HT46R4AE	CICE46C00CCEC CICE46C00CCED
CPCB46SER0001C	HT46R22, HT46C22, HT46R23, HT46C23, HT46R232, HT46C232, HT46R24, HT46C24, HT46R46, HT46C46, HT46R46E, HT46C46E, HT46R46-H, HT46R47, HT46C47, HT46R47E, HT46C47E, HT46R47-H, HT46R48A, HT46R48AE, HT46R49, HT46R49E, HT46R51A, HT46R52A, HT46R53A, HT46R54A, HT46R62, HT46C62, HT46R63, HT46C63, HT46R64, HT46C64, HT46R65, HT46C65, HT46RU22, HT46RU232, HT46RU24, HT46RU25, HT46CU25, HT46RU26, HT46RU66, HT46CU66	CICE46C00CCEB CICE46C00CCEC CICE46C00CCED
	HT46R652, HT46R4A, HT46R4AE	CICE46C00CCED
CPCB46SER0001D	HT46R22, HT46C22, HT46R23, HT46C23, HT46R232, HT46C232, HT46R24, HT46C24, HT46R46, HT46C46, HT46R46E, HT46C46E, HT46R46-H, HT46R47, HT46C47, HT46R47E, HT46C47E, HT46R47-H, HT46R48A, HT46R48AE, HT46R49, HT46R49E, HT46R4A, HT46R4AE, HT46R51A, HT46R52A, HT46R53A, HT46R54A, HT46R62, HT46C62, HT46R63, HT46C63, HT46R64, HT46C64, HT46R65, HT46C65, HT46RU22, HT46RU232, HT46RU24, HT46RU25, HT46CU25, HT46RU26, HT46RU66, HT46CU66, HT46CU67, HT46RU67	CICE46L000007A
	HT46F46E, HT46F47E, HT46R4A, HT46R4AE	CICE46F000007A
CPCB46R940007A	HT46R92, HT46R94	CICE46R940007A
CPCB46R14A007A	HT46R12A, HT46R14A, HT46R321	CICE46R14A007A
CPCB46R342006A	HT46R32, HT46R322, HT46R34, HT46R342	CICE46C00CCED CICE46L000007A CICE46F000007A
CPCB46RS03007A	HT46RS03, HT46RS03P	CICE46RS03007A
CPCB56R640007A	HT56R64	CICE56R640007A
CPCB46R73D006A	HT46R71D-1, HT46R72D-1, HT46R73D-1, HT46R74D-1, HT46RU75D-1	CICE46R73D006A
CPCB82J300006A	HT82J30R, HT82J30A	CICE82J300006A
CPCB46RB70005A	HT46RB50, HT46RB70	CICE46RB70005A
CPCB46RB70005B	HT46RB50, HT46RB70	CICE46RB70005B
CPCB82K680004A	HT82K68E-L	CICE82K680004A
CPCB82K960004B	HT82K94E, HT82K94A, HT82K95E, HT82K95A, HT82K95EE, HT82K95AE, HT82K96E, HT82K96A	CICE82K960004A
CPCB82M990004A	HT82J97E, HT82J97A, HT82M99E, HT82M99A, HT82M99EE, HT82M99AE	CICE82M990004A
CPCB82M990004C	HT82J97E, HT82J97A, HT82M99E, HT82M99A, HT82M99EE, HT82M99AE, HT82M9AE, HT82M9AA, HT82M9AEE, HT82M9BE, HT82M9BA, HT82M9BEE	CICE82M990004B
CPCB82K730006A	HT82M72E, HT82M72A, HT82K72E, HT82K72A, HT82M73E, HT82K73E	CICE82K730006A
CPCB47C10L006A	HT47C06L, HT47C10L	CICE47C10L006A
CPCB47R200005A	HT47R10A-1, HT47C10-1, HT47R20A-1, HT47C20-1, HT47C20L	CICE47R200005A

HT-ICE Interface Card		
Product Code	**Supported Devices**	**HT-ICE Type No.**
CPCB45R380006B	HT45R36, HT45R38	CICE46C00CCED CICE46L000007A CICE46F000007A
CPCB45R350007A	HT45R35	CICE46C00CCED CICE46F000007A CICE46L000007A
CPCB45RM03006A	HT45RM03A	CICE45RM03006A
CPCB48RA03005A	HT48RA0-3, HT48CA0-3	CICE48RA03005A
CPCB49RA00006A	HT49RA0, HT49CA0	CICE49RA00006A
CPCB49RA10007A	HT49RA1, HT49CA1	CICE49RA10007A
CPCB82A822005A	HT82A821R, HT82A822R	CICE82A822005A
CPCB82A832005A	HT82A834R, HT82A850R, HT82A851R	CICE82A832005A
CPCB950000005A	HT95A100, HT95A10P, HT95A200, HT95A20P, HT95A300, HT95A30P, HT95A400, HT95A40P, HT95L000, HT95L00P, HT95L100, HT95L10P, HT95L200, HT95L20P, HT95L300, HT95L30P, HT95L400, HT95L40P, HT95C200, HT95C20P, HT95C300, HT95C30P, HT95C400, HT95C40P	CICE950000005A
CPCB95R3X0008B	HT95R23, HT95R33	CICE95R3X0008A
CPCB860000004A	HT86030, HT86070, HT86072, HT86144, HT86R192, HT86192, HT86R384, HT86384, HT86576, HT86768, HT83004, HT83007, HT83010, HT83020, HT83038, HT83050, HT83R074, HT83074	CICE860000004A

OTP/Flash Programmer

Although most of the HT-ICE hardware emulators now come equipped with an integrated programmer, Holtek also supplies a range of additional tools for device programming. These programmers can be used to program OTP or Flash type devices during product development or for low to medium volume production purposes. Most of these programmers can operate by connecting to a PC or to operate in a stand alone mode. More information on the relevant programmers can be found within the programmer′s Users Guide. Note that if the device package type to be programmed does not match the supplied Textool socket, extra Adapter Cards are available to accommodate various device package types.

Various kinds of OTP/Flash programmers exist, of which are included a partial-lock programmer and two-chips-in-one programmer, which support the MCU with partial lock function and two chips in one package respectively. Also, a Flash programmer provides the Flash devices programming functions. The detailed information is contained within HT-MTPWriter User′s Guide.

OTP/Flash Programmer		
Product Name	**Product Code**	**Product Contents**
HT-Writer	COTPWRITER00A	HT-Writer (with an adapter card CADPDIP40A), CD, Power Adapter, RS-232 Cable The HT-Writer supports most Holtek OTP MCU devices with the exception of the following: HT48R01A, HT48R02, HT48R03, HT46R01A, HT46R02, HT46R03, HT56R64, HT56R678, HT45R0S, HT45R0MA, HT45RM03A, HT45R11, HT45R0Y, HT46RS03, HT46RS03P which are supported by the Holtek MSR Writer. The following devices are also not supported by the HT-Writer but are supported by the Holtek VMR writer: HT36Rx, HT86Rx, HT83Rx, HT46RU26, HT46RU67, HT46RU68
HT-2Cwriter (2-chip-in-one)	COTPEEPROM005A	HT-2Cwriter (with an adapter card CADPDIP40B), CD, Power Adapter, RS-232 Cable
HT-PLWriter (Partial Lock)	COTPPLOCK0005A	HT-PLwriter (with an adapter card CADPDIP40A), CD, Power Adapter, RS-232 Cable
Holtek M1 Writer	EW-M1 V1.0	Holtek M1-writer (with CADPDIP40A), CD, Power Adaptor, RS-232 Cable, EIC-101 (Special Note: Supports MTP ISP Programming On-line and Off-line)
Holtek VMR Writer	EW-VMR	Holtek VMR-writer, CD, Power Adaptor, USB Cable Holtek MCU writer for HT36Rx, HT86Rx, HT83Rx, HT46RU26, HT46RU67, HT46RU68
Holtek PTS writer	EW-PTS V1.0	Holtek PTS-writer, CD, Power Adaptor, USB Cable
Holtek MSR Writer	EW-MSR V1.0	Holtek MSR-writer, CD, Power Adaptor, RS-232 Cable Holtek MCU writer for HT48R01A, HT48R02, HT48R03, HT46R01A, HT46R02, HT46R03, HT56R64, HT56R678, HT45RM03A, HT46RS03, HT46RS03P
Holtek MTP ISP cable	EIC-100	EIC-100, USB Cable

Product Application Combination

Product Application Combination		
S/W	**H/W**	**Description**
EverPro M1000 V1.17	HT-writer	Support existing OTP
	EW-MSR	Support RC calibration (HT48R01A, HT48R02, HT48R03, HT46R01A, HT46R02, HT46R03)
	EW-M1	Support HT48F06E, HT48F10E, HT48F30E, HT48F50E, HT48F70E
EverPro M1001 V1.05	EW-VMR	Support HT36R & HT86R OTP M1001 is the transition product, future will be able by M1000 the V1.10 substitution
EverPro K1000 V1.0	On-board writer	Support existing OTP, MTP, but not support RC Calibration, included in IDE3000 S/W
EverPro S1000 V1.20	EIC-101 Starter Kit	Penetrates PC USB port to make In-system programming Starter Kit

Accessories and Learning Kits

A USB interface cable is available to allow the HT-ICE emulators to interface to the PC USB port rather than the standard printer port. Additionally a prototype board is available for the HT46 and HT48 R/C/F series of devices. A Starter Kit and Learner Kit is also available which can be used in place of the HT-ICE for product learning and application development purposes.

Accessories and Learning Kits

Product Name	Product Code	Product Contents
EIC-100	EIC-100 V1.0	Flash USB interfaced ISP cable
EP-100	EP-100 V1.0	Prototype board for HT46 and HT48 R/C/F series
Flash/MTP Learning Kits	ELK-400 V1.0	ESK-100 (new Flash/MTP starter kit), EIC-100, EP-100, USB cable
USB ICE Cable	CUSBICECABLE4A	HT-ICE printer port to USB converter cable

OTP/Flash Adapter Card

The Holtek OTP/Flash Programmers and HT-ICE are supplied with a single Adapter Card into which the OTP/Flash devices can be placed for programming. However as the standard supplied Adapter Card my not fit all available package types, others are available. To enable selection of the appropriate Adapter Card type, the following table shows a cross reference between the Adapter Card part number, device and package type.

OTP Adapter Card

Product Code	Device Part No.	Product Contents
CADPDIP40A	HT48R062	16DIP
	HT48R05A-1, HT48R06A-1, HT48R08A-1, HT48F06E, HT46R46, HT46R46-H, HT46R47, HT46R47-H, HT46R51A, HT46R52A, HT46F46E, HT46F47E	18DIP
	HT46R48A, HT46R49	20DIP
	HT48R07A-1, HT48R09A-1, HT48R0AA-1, HT48R10A-1, HT48R30A-1, HT48F10E, HT48F30E, HT46R22, HT46R23, HT46R48A, HT46R49, HT46F48E, HT46F49E, HT46R12A, HT46RU22	24SKDIP
	HT48R0AA-1, HT48R30A-1, HT48R50A-1, HT48F30E, HT48F50E, HT46R49, HT46R4A, HT46R23, HT46R232, HT46R24, HT46R53A, HT46R54A, HT46F49E, HT46R14A, HT46R32, HT46R321, HT46R34, HT46RU232, HT46RU24, HT45RM03A	28SKDIP
	HT46R4A	32DIP
CADPDIP40B	HT46R46E, HT46R47E	18DIP
	HT46R48AE, HT46R49E	24SKDIP
	HT46R49E, HT46R4AE	28SKDIP
	HT46R4AE	32DIP
CADPSOP28A	HT48R05A-1, HT48R06A-1, HT48R08A-1, HT46R46, HT46R46-H, HT46R47, HT46R47-H	16SOP
	HT48F06E, HT46F46E, HT47F47E	18SOP
	HT46R48A, HT46R49, HT46R51A, HT46R52A, HT82K68E-L	20SOP
	HT48R07A-1, HT48R09A-1, HT48R0AA-1, HT48R10A-1, HT48R30A-1, HT48F10E, HT48F30E, HT46R22, HT46R23, HT46RU22, HT46R48A, HT46R49, HT46F48E, HT47F49E, HT46R12A	24SOP
	HT48R30A-1, HT48R50A-1, HT48R0AA-1, HT48F30E, HT48F50E, HT46R23, HT46R232, HT46R24, HT46R49, HT46R4A, HT46F49E, HT46R14A, HT46R32, HT46R321, HT46R34, HT46RU232, HT46RU24, HT48RA1, HT48RA3, HT48RA5, HT45RM03A, HT82K68E-L	28SOP
CADPSOP28B	HT46R46E, HT46R47E	18SOP
	HT46R48AE, HT46R49E	24SOP
	HT46R49E, HT46R4AE	28SOP
CADP10MSOP-A	HT48R02, HT48R03, HT46R02, HT46R03	10MSOP
CADP10MSOP-B	HT48R01A, HT46R01A	10MSOP
CADP16NSOP-A	HT48R062, HT48R05A-1, HT48R06A-1, HT48R08A-1, HT48F06E, HT46R46, HT46R47, HT46R51A, HT46R52A, HT46F46E, HT46F47E	16NSOP
CADP16NSOP-D	HT45R35	16NSOP
CADP28SOP-D	HT82M9BEE	28SOP
CADP28SOP-T	HT48RA0-3	20SOP
CADP28SOP-X	HT83R074	28SOP
CADP28SOP-AA	HT45R35	20/24/28SOP
CADP28SOP-AB	HT82M72E, HT82M73E	20/28SOP
CADP40DIP-T	HT45R35	16/20DIP, 24/28SKDIP
CADP40DIP-W	HT46RS03, HT46RS03P	16/20DIP
CADP44QFP-D	HT46R322, HT46R342	44QFP
CADP44QFP-F	HT48R52A, HT48R54A, HT46R92, HT49R94	44QFP
CADP44QFP-G	HT46R4A, HT46R4AE	44QFP
CADP48R05SN16A	HT48R05A-1, HT48R06A-1, HT48R08A-1	16SSOP (150mil)
	HT48F06E, HT46R46, HT46R47, HT46R51A, HT46R52A, HT46F47E	20SSOP
CADP48R50SS48A	HT48R502, HT48R50A-1, HT48R70A-1, HT48RU80, HT48F50E, HT48F70E, HT46R232, HT46R24, HT46RU232, HT46RU24, HT46RU25, HT46RU26, HT82K68E-L	48SSOP
	HT46RU25, HT46RU26	56SSOP
CADP48R70QF64A	HT48R502, HT48R70A-1, HT48RU80, HT48F70E	64QFP
CADP48R53QF52A	HT48R52A, HT48R54A, HT46R92, HT49R94	52QFP
CADP49R50QF10A	HT49R50A-1, HT49R70A-1, HT49RU80	100QFP

OTP Adapter Card		
CADPNSSOP28A	HT48R07A-1, HT48R09A-1, HT46RU22, HT46R48A	24SSOP
	HT46R32, HT46R321, HT46R34	28SSOP
CADP46R54SO28A	HT46R53A, HT46R54A	20/24/28SOP
CADP46R62SS56A	HT49R30A-1, HT49R50A-1	48SSOP
	HT46R62, HT46R64, HT46R65, HT46RU66, HT46RU67, HT56R64	56SSOP
CADP46R62QF44A	HT49R10A-1, HT49C10-1, HT45R36	44QFP
CADP46R62QF52A	HT46R62, HT46R64, HT46R65, HT46RU66, HT46RU67, HT56R64, HT45R36, HT45R38	52QFP
CADP46R63QF10A	HT46R63	100QFP
CADP46R63SS56A	HT46R63	56SSOP
CADP46R64QF10A	HT46R64, HT46R65, HT46R652	100QFP
CADP46R66QF10A	HT46RU66, HT46RU67, HT56R64	100QFP
CADP52QFP-D	HT46R72D-1, HT46R73D-1	52QFP
CADP52QFP-E	HT49RA0, HT49RA1	52QFP
CADP64QFP-E	HT49RA1	64QFP
CADP56SSOP-L	HT46R71D-1	48SSOP
CADP56SSOP-M	HT46R74D-1	56SSOP
CADP56SSOP-Q	HT82K72E, HT82K73E	48SSOP
CADP100QFP-H	HT46RU75D-1	100QFP
CADP82J30DI28A	HT82J30R	28SKDIP
CADP82J30SO28A	HT82J30R	28SOP
CADP82J30QF44A	HT82J30R	44QFP
CADP47R10QF44A	HT47R10A-1	44QFP
CADP47R20QF64A	HT47R20A-1	64QFP
CADP28SSOP-R	HT46RS03, HT46RS03P	16SSOP
CADP28SSOP-B	HT48RA0-3	20SSOP (150mil)
CADP28SSOP-M	HT82M99E, HT82M99EE, HT82M9AE, HT82M9AEE, HT82M9BE	20/24/28SSOP
CADP28SSOP-P	HT82M72E, HT82M73E	20/28SSOP
CADP28SSOP-T	HT46RS03, HT46RS03P	20SSOP
CADP30SSOP-F	HT82A851R	24SSOP (209mil)
CADP48RA0SN28A	HT48RA0-2	20SSOP (150mil)
	HT48RA0-1	24SSOP (150mil)
CADP48RA0SO28A	HT48RA0-2	20SOP
	HT48RA0-1	24SOP
CADPMSSOP28A	HT48RA1, HT48RA3, HT48RA5	28SSOP (209mil)
CADP46RB7DI28A	HT46RB50, HT46RB70	28SKDIP
CADP46RB7SO28A	HT46RB50, HT46RB70	28SOP
CADP46RB7SS48A	HT46RB50, HT46RB70	48SSOP
CADP82K96DI40A	HT82K94E	40DIP
CADP82K96SM20A	HT82K95E, HT82K96E	20SSOP
CADP82K96SO20B	HT82K95E, HT82K95EE, HT82K96E	20SOP
CADP82K96SO28B	HT82K95E, HT82K95EE, HT82K96E	28SOP
CADP82K96SS48A	HT82K94E, HT82K95E, HT82K96E	48SSOP
CADP82M99DI20B	HT82M99E	18/20DIP
CADP82M99SO20B	HT82M99E	18SOP
	HT82J97E, HT82M99E	20SOP
CADP82J97SO28A	HT82J97E	28SOP
CADP32QFN-B	HT82K68E-L	32QFN
CADP82821SN24A	HT82A821R, HT82A822R	24SSOP
CADP82821SO24A	HT82A821R, HT82A822R	24SOP
CADP82822SS48A	HT82A821R, HT82A822R	48SSOP
CADP82832LQ48A	HT82A834R, HT82A850R	48LQFP
CADP82832SS48A	HT82A834R	48SSOP
CADP95A10SO28A	HT95A10P	28SOP
CADP95A20SS48A	HT95A20P, HT95A30P	48SSOP
CADP95L10QF64A	HT95A40P, HT95L10P	64QFP
CADP95L00SS56A	HT95L00P	56SSOP
CADP95L20QF10A	HT95L20P, HT95L30P	100QFP
CADP95C20QF12A	HT95C20P, HT95C30P, HT95C40P, HT95L40P	128QFP
CADP86R00SO28A	HT86R192, HT86R384	28SOP
CADP86R00QF44A	HT86R192	44QFP
CADP86R00QF10A	HT86R192	100QFP
CADP81R03DI16A	HT81R06, HT81R09, HT81R18, HT81R36	16DIP

MCU Tools Indexing Table

The following table the correct tools to be quickly located against a device part number reference. In instances where tools are not listed for specific devices, this may infer that such tools are not required.

In the following indexing tables, the part number of the OTP writer is COTPWRITER00A. The HT-ICE, with part number beginning with "C", has an integrated OTP writer on board, and therefore it is not required to obtain an extra OTP writer. Other HT-ICEs, whose part number beginning with "T", do not have integrated OTP writers and require separate OTP writers for programming.

MCU Tools Indexing Table

Device Part No.	Package Type	HT-ICE	I/O Interface Card	OTP Writer (& Adapter)
Cost-Effective I/O Type MCU				
HT48R05A-1 HT48C05 HT48R06A-1 HT48C06 HT48R08A-1	16NSOP	CICE48C00CCF, CICE48E000004A or CICE48U000006A	CPCB48MIO0001A CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADP16NSOP-A)
	16SSOP			COTPWRITER00A (CADP48R05SN16A)
	18DIP			COTPWRITER00A (CADPDIP40A)
	18SOP			COTPWRITER00A (CADPSOP28A)
HT48R062 HT48C062	16DIP	CICE48C00CCF, CICE48E000004A or CICE48U000006A	CPCB48MIO0001A CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADPDIP40A)
	16NSOP			COTPWRITER00A (CADP16NSOP-A)
HT48R07A-1 HT48R09A-1	24SKDIP	CICE48C00CCF, CICE48E000004A or CICE48U000006A	CPCB48MIO0001A CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADPDIP40A)
	24SOP			COTPWRITER00A (CADPSOP28A)
	24SSOP			COTPWRITER00A (CADPNSSOP28A)
HT48R0AA-1	24/28SKDIP	CICE48E000004A	CPCB48E000004C	COTPWRITER00A (CADPDIP40A)
	24/28SOP			COTPWRITER00A (CADPSOP28A)
I/O Type MCU				
HT48R10A-1 HT48C10-1	24SKDIP	CICE48C00CCF, CICE48E000004A or CICE48U000006A	CPCB48MIO0001A CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADPDIP40A)
	24SOP			COTPWRITER00A (CADPSOP28A)
HT48R30A-1 HT48C30-1	24/28SKDIP	CICE48C00CCF, CICE48E000004A or CICE48U000006A	CPCB48MIO0001A CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADPDIP40A)
	24/28SOP			COTPWRITER00A (CADPSOP28A)
HT48R50A-1 HT48C50-1	28SKDIP	CICE48C00CCF, CICE48E000004A or CICE48U000006A	CPCB48MIO0001A CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADPDIP40A)
	28SOP			COTPWRITER00A (CADPSOP28A)
	48SSOP			COTPWRITER00A (CADP48R50SS48A)
HT48R502 HT48R70A-1 HT48C70-1	48SSOP	CICE48C00CCF, CICE48E000004A or CICE48U000006A	CPCB48MIO0001A CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADP48R50SS48A)
	64QFP			COTPWRITER00A (CADP48R70QF64A)
HT48RU80 HT48CU80	48SSOP	CICE48U000006A	CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADP48R50SS48A)
	64QFP			COTPWRITER00A (CADP48R70QF64A)
Small Package I/O Type MCU				
HT48R02-1/-2/-3 HT48R03-1/-2/-3	10MSOP	CICE48R030006A	CPCB48R030006A	EW-MSR (CADP10MSOP-A)
HT48R01A1/A2/A3	10MSOP	CICE48R030006A	CPCB48R030006A	EW-MSR (CADP10MSOP-B)
I/O Type MCU with 16×16 High Current LED Driver				
HT48R52A HT48R54A	44QFP	CICE48R52A006A	CPCB48R52A006A	COTPWRITER00A (CADP44QFP-F)
	52QFP			COTPWRITER00A (CADP48R53QF52A)
I/O Flash Type MCU with EEPROM				
HT48F06E	16NSOP	CICE48E000004A or CICE48U000006A	CPCB48E000004A CPCB48E000004B	EW-M1 (CADP16NSOP-A)
	18DIP			EW-M1 (CADPDIP40A)
	18SOP			EW-M1 (CADPSOP28A)
	20SSOP			EW-M1 (CADP48R05SN16A)
HT48F10E	24SKDIP	CICE48E000004A or CICE48U000006A	CPCB48E000004A CPCB48E000004B	EW-M1 (CADPDIP40A)
	24SOP			EW-M1 (CADPSOP28A)
HT48F30E	24/28SKDIP	CICE48E000004A or CICE48U000006A	CPCB48E000004A CPCB48E000004B	EW-M1 (CADPDIP40A)
	24/28SOP			EW-M1 (CADPSOP28A)
HT48F50E	28SKDIP	CICE48E000004A or CICE48U000006A	CPCB48E000004A CPCB48E000004B	EW-M1 (CADPDIP40A)
	28SOP			EW-M1 (CADPSOP28A)
	48SSOP			EW-M1 (CADP48R50SS48A)
HT48F70E	48SSOP	CICE48E000004A or CICE48U000006A	CPCB48E000004A CPCB48E000004B	EW-M1 (CADP48R50SS48A)
	64QFP			EW-M1 (CADP48R70QF64A)

MCU Tools Indexing Table

Device Part No.	Package Type	HT-ICE	I/O Interface Card	OTP Writer (& Adapter)
LCD Type MCU				
HT49R10A-1 HT49C10-1	44QFP	CICE49C00CCAA or CICE49U000006A	CPCB49C000001A CPCB49C000001B	COTPWRITER00A (CADP46R62QF44A)
HT49R30A-1 HT49C30-1 HT49C30L	48SSOP	CICE49C00CCAA or CICE49U000006A	CPCB49C000001A CPCB49C000001B	COTPWRITER00A (CADP46R62SS56A)
HT49R50A-1 HT49C50-1 HT49C50L	48SSOP	CICE49C00CCAA or CICE49U000006A	CPCB49C000001A CPCB49C000001B	COTPWRITER00A (CADP46R62SS56A)
	100QFP			COTPWRITER00A (CADP49R50QF10A)
HT49R70A-1 HT49C70-1 HT49C70L	100QFP	CICE49C00CCAA or CICE49U000006A	CPCB49C000001A CPCB49C000001B	COTPWRITER00A (CADP49R50QF10A)
HT49RU80 HT49CU80	100QFP	CICE49U000006A	CPCB49C000001B	COTPWRITER00A (CADP49R50QF10A)
Cost-Effective A/D Type MCU				
HT46R46 HT46C46 HT46R47 HT46C47	16NSOP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADP16NSOP-A)
	18DIP			COTPWRITER00A (CADPDIP40A)
	18SOP			COTPWRITER00A (CADPSOP28A)
	20SSOP			COTPWRITER00A (CADP48R05SN16A)
HT46R48A HT46C48A	20DIP, 24SKDIP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADPDIP40A)
	20/24SOP			COTPWRITER00A (CADPSOP28A)
	24SSOP			COTPWRITER00A (CADPNSSOP28A)
HT46R49	20DIP, 24/28SKDIP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADPDIP40A)
	20/24/28SOP			COTPWRITER00A (CADPSOP28A)
HT46R4A	28SDKIP, 32DIP	CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADPDIP40A)
	28SOP			COTPWRITER00A (CADPSOP28A)
	44QFP			COTPWRITER00A (CADP44QFP-G)
HT46R46E HT46C46E HT46R47E HT46C47E	18DIP	CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPEEPROM005A (CADPDIP40B)
	18SOP			COTPEEPROM005A (CADPSOP28B)
Cost-Effective A/D Type MCU				
HT46R48AE HT46C48AE	24SKDIP	CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPEEPROM005A (CADPDIP40B)
	24SOP			COTPEEPROM005A (CADPSOP28B)
HT46R49E	24/28SKDIP	CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPEEPROM005A (CADPDIP40B)
	24/28SOP			COTPEEPROM005A (CADPSOP28B)
HT46R4AE	28SDKIP, 32DIP	CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPEEPROM005A (CADPDIP40B)
	28SOP			COTPEEPROM005A (CADPSOP28B)
	44QFP			COTPEEPROM005A (CADP44QFP-G)
A/D Type MCU				
HT46R22 HT46C22	24SKDIP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADPDIP40A)
	24SOP			COTPWRITER00A (CADPSOP28A)
HT46R23 HT46C23	24/28SKDIP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADPDIP40A)
	24/28SOP			COTPWRITER00A (CADPSOP28A)
HT46R232 HT46C232 HT46R24 HT46C24	28SKDIP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADPDIP40A)
	28SOP			COTPWRITER00A (CADPSOP28A)
	48SSOP			COTPWRITER00A (CADP48R50SS48A)
HT46R46-H HT46R47-H	18DIP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADPDIP40A)
	18SOP			COTPWRITER00A (CADPSOP28A)
HT46R51A HT46R52A	16NSOP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADP16NSOP-A)
	18DIP			COTPWRITER00A (CADPDIP40A)
	20SOP			COTPWRITER00A (CADPSOP28A)
	20SSOP			COTPWRITER00A (CADP48R05SN16A)
HT46R53A HT46R54A	28SKDIP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADPDIP40A)
	28SOP			COTPWRITER00A (CADP46R54SO28A)
Small Package A/D Type MCU				
HT46R02-1/-2/-3 HT46R03-1/-2/-3	10MSOP	CICE48R030006A	CPCB48R030006A	EW-MSR (CADP10MSOP-A)
HT46R01A1/A2/A3	10MSOP	CICE48R030006A	CPCB48R030006A	EW-MSR (CADP10MSOP-A)

MCU Tools Indexing Table

Device Part No.	Package Type	HT-ICE	I/O Interface Card	OTP Writer (& Adapter)
A/D Type MCU with 16×16 High Current LED Driver				
HT46R92 HT46R94	44QFP	CICE46R940007A	CPCB46R940007A	COTPWRITER00A (CADP44QFP-F)
	52QFP			COTPWRITER00A (CADP48R53QF52A)
A/D Flash Type MCU with EEPROM				
HT46F46E	16NSOP	CICE46F000007A	CPCB46SER0001D	EW-M1 (CADP16NSOP-A)
	18DIP			EW-M1 (CADPDIP40A)
	18SOP			EW-M1 (CADPSOP28A)
HT46F47E	16NSOP	CICE46F000007A	CPCB46SER0001D	EW-M1 (CADP16NSOP-A)
	18DIP			EW-M1 (CADPDIP40A)
	18DOP			EW-M1 (CADPSOP28A)
	20SSOP			EW-M1 (CADP48R05SN16A)
HT46F48E	24SKDIP	CICE46F000007A	CPCB46SER0001D	EW-M1 (CADPDIP40A)
	24SOP			EW-M1 (CADPSOP28A)
HT46F49E	24/28SKDIP	CICE46F000007A	CPCB46SER0001D	EW-M1 (CADPDIP40A)
	24/28SOP			EW-M1 (CADPSOP28A)
A/D Type MCU with Comparator				
HT46R12A	24SKDIP	CICE46R14A007A	CPCB46R14A007A	COTPWRITER00A (CADPDIP40A)
	24SOP			COTPWRITER00A (CADPSOP28A)
HT46R14A	28SKDIP	CICE46R14A007A	CPCB46R14A007A	COTPWRITER00A (CADPDIP40A)
	28SOP			COTPWRITER00A (CADPSOP28A)
A/D Type MCU with OPA				
HT46R32 HT46R34	28SKDIP	CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46R342006A	COTPWRITER00A (CADPDIP40A)
	28SOP			COTPWRITER00A (CADPSOP28A)
	28SSOP			COTPWRITER00A (CADPNSSOP28A)
HT46R321	28SKDIP	CICE46R14A007A	CPCB46R14A007A	COTPWRITER00A (CADPDIP40A)
	28SOP			COTPWRITER00A (CADPSOP28A)
	28SSOP			COTPWRITER00A (CADPNSSOP28A)
HT46R322 HT46R342	44QFP	CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46R342006A	COTPWRITER00A (CADP44QFP-D)
A/D Type MCU with Multiple OPA & Comparator				
HT46RS03 HT46RS03P	16/20DIP	CICE46RS03007A	CPCB46RS03007A	EW-MSR (CADP40DIP-W)
	16SSOP			EW-MSR (CADP28SSOP-R)
	20SSOP			EW-MSR (CADP28SSOP-T)
A/D Type MCU with LCD				
HT46R62 HT46C62	52QFP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADP46R62QF52A)
	56SSOP			COTPWRITER00A (CADP46R62SS56A)
HT46R63 HT46C63	56SSOP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADP46R63SS56A)
	100QFP			COTPWRITER00A (CADP46R63QF10A)
HT46R64 HT46C64 HT46R65 HT46C65	52QFP	CICE46C00CCEB, CICE46C00CCEC, CICE46C00CCED or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADP46R62QF52A)
	56SSOP			COTPWRITER00A (CADP46R62SS56A)
	100QFP			COTPWRITER00A (CADP46R64QF10A)
HT46R652	100QFP	CICE46C00CCED or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADP46R64QF10A)
HT46RU66 HT46CU66	52QFP	CICE46C00CCED or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADP46R62QF52A)
	56SSOP			COTPWRITER00A (CADP46R62SS56A)
	100QFP			COTPWRITER00A (CADP46R66QF10A)
HT46RU67 HT46CU67	52QFP	CICE46L000007A	CPCB46SER0001D	EW-VMR (CADP46R62QF52A)
	56SSOP			EW-VMR (CADP46R62SS56A)
	100QFP			EW-VMR (CADP46R66QF10A)
TinyPower™ A/D Type MCU with LCD				
HT56R64	52QFP	CICE56R640007A	CPCB56R640007A	EW-MSR (CADP46R62QF52A)
	56SSOP			EW-MSR(CADP46R62SS56A)
	100QFP			EW-MSR(CADP46R66QF10A)
Dual Slope A/D Type MCU with LCD				
HT46R71D-1	48SSOP	CICE46R73D006A	CPCB46R73D006A	COTPWRITER00A (CADP56SSOP-L)
HT46R72D-1 HT46R73D-1	52QFP	CICE46R73D006A	CPCB46R73D006A	COTPWRITER00A (CADP52QFP-D)
HT46R74D-1	56SSOP	CICE46R73D006A	CPCB46R73D006A	COTPWRITER00A (CADP56SSOP-M)
HT46RU75D-1	100QFP	CICE46R73D006A	CPCB46R73D006A	COTPWRITER00A (CADP100QFP-H)

MCU Tools Indexing Table

Device Part No.	Package Type	HT-ICE	I/O Interface Card	OTP Writer (& Adapter)
16 Channel A/D MCU & SPI Interface				
HT82J30R HT82J30A	28SKDIP	CICE82J300006A	CPCB82J300006A	COTPWRITER00A (CADP82J30DI28A)
	28SOP	CICE82J300006A	CPCB82J300006A	COTPWRITER00A (CADP82J30SO28A)
	44QFP	CICE82J300006A	CPCB82J300006A	COTPWRITER00A (CADP82J30QF44A)
HT82J31A	28SKDIP	CICE82J300006A	CPCB82J300006A	COTPWRITER00A (CADP82J30DI28A)
	28SOP	CICE82J300006A	CPCB82J300006A	COTPWRITER00A (CADP82J30DI28A)
A/D Type MCU with UART				
HT46RU22	24SKDIP	CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADPDIP40A)
	24SOP			COTPWRITER00A (CADPSOP28A)
	24SSOP			COTPWRITER00A (CADPNSSOP28A)
HT46RU232 HT46RU24	28SKDIP	CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADPDIP40A)
	28SOP			COTPWRITER00A (CADPSOP28A)
	48SSOP			COTPWRITER00A (CADP48R50SS48A)
HT46RU25 HT46CU25	48/56SSOP	CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	COTPWRITER00A (CADP48R50SS48A)
HT46RU26	48/56SSOP	CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB46SER0001B CPCB46SER0001C CPCB46SER0001D	EW-VMR (CADP48R50SS48A)
A/D Type USB MCU wih SPI				
HT46RB50 HT46RB70	28SKDIP	CICE46RB70005A or CICE46RB70005B	CPCB46RB70005A CPCB46RB70005B	COTPWRITER00A (CADP46RB7DI28A)
	28SOP			COTPWRITER00A (CADP46RB7SO28A)
	48SSOP			COTPWRITER00A (CADP46RB7SS48A)
I/O Type MCU with USB Interface				
HT82K94E HT82K94A	48SSOP	CICE82K960004A	CPCB82K960004D	COTPWRITER00A (CADP82K96SS48A)
HT82K95E HT82K95A	28SOP	CICE82K960004A	CPCB82K960004D	COTPWRITER00A (CADP82K96SO28B)
	48SSOP			COTPWRITER00A (CADP82K96SS48A)
HT82K95EE HT82K95AE	28SOP	CICE82K960004A	CPCB82K960004D	COTPWRITER00A (CADP82K96SO28B)
HT82M99E HT82M99A	18/20DIP	CICE82M990004A or CICE82M990004B	CPCB82M990004A CPCB82M990004C	COTPWRITER00A (CADP82M99DI20A)
	18/20SOP			COTPWRITER00A (CADP28SOP-D)
	20SSOP			COTPWRITER00A (CADP28SSOP-M)
HT82M99EE HT82M99AE	20SSOP	CICE82M990004A or CICE82M990004B	CPCB82M990004A CPCB82M990004C	COTPWRITER00A (CADP28SSOP-M)
HT82M9AE HT82M9AA	20SOP	CICE82M990004A or CICE82M990004B	CPCB82M990004A CPCB82M990004C	COTPWRITER00A (CADP28SOP-D)
	20/24SSOP			COTPWRITER00A (CADP28SSOP-M)
A/D Type MCU with USB Interface				
HT82M9AEE	20/24SSOP	CICE82M990004A or CICE82M990004B	CPCB82M990004A CPCB82M990004C	COTPWRITER00A (CADP28SSOP-M)
HT82M9BE HT82M9BA	24/28SSOP	CICE82M990004A or CICE82M990004B	CPCB82M990004A CPCB82M990004C	COTPWRITER00A (CADP28SSOP-M)
HT82M9BEE	28SOP	CICE82M990004A or CICE82M990004B	CPCB82M990004A CPCB82M990004C	COTPWRITER00A (CADP28SSOP-M)
HT82K96E HT82K96A	28SOP	CICE82K960004A	CPCB82K960004D	COTPWRITER00A (CADP82K96SO28B)
	48SSOP			COTPWRITER00A (CADP82K96SS48A)
HT82J97E HT82J97A	20SOP	CICE82M990004A or CICE82M990004B	CPCB82M990004A CPCB82M990004C	COTPWRITER00A (CADP82M99SO20B)
	28SOP			COTPWRITER00A (CADP82J97SO28A)
I/O Type MCU				
HT82K68E-L HT82K68A-L	20/28SOP	CICE82K680004A	CPCB82K680004A	COTPWRITER00A (CADPSOP28A)
	32QFN			COTPWRITER00A (CADP32QFN-B)
	48SSOP			COTPWRITER00A (CADP48R50SS48A)
27MHz Keyboard/Mouse TX MCU				
HT82M72E HT82M72A	20/28SOP	CICE82K730006A	CPCB82K730006A	COTPWRITER00A (CADP28SOP-AB)
	28SSOP			COTPWRITER00A (CADP28SSOP-P)
HT82K72E HT82K72A	48SSOP	CICE82K730006A	CPCB82K730006A	COTPWRITER00A (CADP56SSOP-Q)
24GHz Keyboard/Mouse TX MCU				
HT82M73E	20SOP	CICE82K730006A	CPCB82K730006A	COTPWRITER00A (CADP28SOP-AB)
	20/28SSOP			COTPWRITER00A (CADP28SSOP-P)
HT82K73E	48SSOP	CICE82K730006A	CPCB82K730006A	COTPWRITER00A (CADP56SSOP-Q)

MCU Tools Indexing Table

Device Part No.	Package Type	HT-ICE	I/O Interface Card	OTP Writer (& Adapter)
R-F Type MCU				
HT47C06L	44QFP	CICE47C10L006A	CPCB47C10L006A	—
HT47R10A-1 HT47C10-1	44QFP	CICE47R200005A	CPCB47R200005A	COTPWRITER00A (CADP47R10QF44A)
HT47C10L	44QFP	CICE47C10L006A	CPCB47C10L006A	—
HT47R20A-1 HT47C20-1 HT47C20L	64QFP	CICE47R200005A	CPCB47R200005A	COTPWRITER00A (CADP47R20QF64A)
C/R-F Type MCU				
HT45R35	16NSOP	CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB45R350007A	COTPWRITER00A (CADP16NSOP-D)
	16/20DIP, 24/28SKDIP			COTPWRITER00A (CADP40DIP-T)
	20/24/28SOP			COTPWRITER00A (CADP28SOP-AA)
HT45R36	44QFP	CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB45R380006B	COTPWRITER00A (CADP46R62QF44A)
	52QFP			COTPWRITER00A (CADP46R62QF52A)
HT45R38	52QFP	CICE46C00CCED, CICE46F000007A or CICE46L000007A	CPCB45R380006B	COTPWRITER00A (CADP46R62QF52A)
Brushless DC Motor Type MCU				
HT45RM03A	28SOP	CICE45RM03006A	CPCB45RM03006A	COTPWRITER00A (CADPDIP40A)
Remote Type MCU				
HT48RA0-3 HT48CA0-3	20SOP	CICE48RA03005A	CPCB48RA03005A	COTPWRITER00A (CADP28SOP-T)
	20SSOP			COTPWRITER00A (CADP28SSOP-B)
HT48RA0-2 HT48CA0-2	20SOP	CICE48C00CCF, CICE48E000004A or CICE48U000006A	CPCB48MIO0001A CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADP48RA0SO28A)
	20SSOP			COTPWRITER00A (CADP48RA0SN28A)
HT48RA0-1 HT48CA0-1	24SOP	CICE48C00CCF, CICE48E000004A or CICE48U000006A	CPCB48MIO0001A CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADP48RA0SO28A)
	24SSOP			COTPWRITER00A (CADP48RA0SN28A)
HT48RA1 HT48CA1 HT48RA3 HT48CA3	28SOP	CICE48C00CCF, CICE48E000004A or CICE48U000006A	CPCB48MIO0001A CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADPSOP28A)
	28SSOP			COTPWRITER00A (CADPMSSOP28A)
HT48RA5 HT48CA5	28SOP	CICE48E000004A or CICE48U000006A	CPCB48E000004A CPCB48E000004B	COTPWRITER00A (CADPSOP28A)
	28SSOP			COTPWRITER00A (CADPMSSOP28A)
Remote Type MCU with LCD				
HT49RA0 HT49CA0	52QFP	CICE49RA00006A	CPCB49RA00006A	COTPWRITER00A (CADP52QFP-E)
HT49RA1 HT49CA1	52QFP	CICE49RA10007A	CPCB49RA10007A	COTPWRITER00A (CADP52QFP-E)
	64QFP			COTPWRITER00A (CADP64QFP-E)
USB Audio MCU				
HT82A821R	24SOP	CICE82A822005A	CPCB82A822005A	COTPWRITER00A (CADP82821SO24A)
	24SSOP			COTPWRITER00A (CADP82821SN24A)
HT82A822R	48SSOP	CICE82A822005A	CPCB82A822005A	COTPWRITER00A (CADP82822SS48A)
HT82A834R	48SSOP	CICE82A832005A	CPCB82A832005A	COTPWRITER00A (CADP82822SS48A)
	48LQFP			COTPWRITER00A (CADP82832LQ48A)
HT82A850R	48LQFP	CICE82A832005A	CPCB82A832005A	COTPWRITER00A (CADP82832LQ48A)
HT82A851R	24SSOP	CICE82A832005A	CPCB82A832005A	COTPWRITER00A (CADP30SSOP-F)
I/O Type Phone MCU				
HT95A100 HT95A10P	28SOP	CICE950000005A	CPCB950000005A	COTPWRITER00A (CADP95A10SO28A)
HT95A200 HT95A20P HT95A300 HT95A30P	48SSOP	CICE950000005A	CPCB950000005A	COTPWRITER00A (CADP95A20SS48A)
HT95A100 HT95A10P	28SOP	CICE950000005A	CPCB950000005A	COTPWRITER00A (CADP95A10SO28A)
HT95R23	48SSOP	CICE95R3X0008A	CPCB95R3X0008B	COTPWRITER00A
I/O Type Phone MCU with DTMF Receiver				
HT95R33	48SSOP	CICE95R3X0008A	CPCB95R3X0008B	COTPWRITER00A

MCU Tools Indexing Table				
Device Part No.	**Package Type**	**HT-ICE**	**I/O Interface Card**	**OTP Writer (& Adapter)**
LCD Type Phone MCU				
HT95L000 HT95L00P	56SSOP	CICE950000005A	CPCB950000005A	COTPWRITER00A (CADP95L00SS56A)
HT95L100 HT95L10P	64QFP	CICE950000005A	CPCB950000005A	COTPWRITER00A (CADP95L10QF64A)
HT95L200 HT95L20P HT95L300 HT95L30P	100QFP	CICE950000005A	CPCB950000005A	COTPWRITER00A (CADP95L20QF10A)
HT95L400 HT95L40P	128QFP	CICE950000005A	CPCB950000005A	COTPWRITER00A (CADP95C20QF12A)
CID Type Phone MCU				
HT95C200 HT95C20P HT95C300 HT95C30P	128QFP	CICE950000005A	CPCB950000005A	COTPWRITER00A (CADP95C20QF12A)
HT95C400 HT95C40P	128QFP	CICE950000005A	CPCB950000005A	COTPWRITER00A (CADP95C20QF12A)

MCU Tools Indexing Table					
Device Part No.	**Package Type**	**HT-ICE**	**I/O Interface Card**	**OTP Writer (& Adapter)**	**Demo Board**
Voice MCU					
HT86030 HT86070 HT86072 HT86144 HT86R192 HT86192 HT86R384 HT86384	28SOP	CICE860000004A	CPCB860000004A	EW-VMR (CADP86R00SO28A)	HT86P05
	44QFP			EW-VMR (CADP86R00QF44A)	
	100QFP			EW-VMR (CADP86R00QF10A)	
HT86576 HT86768	100QFP			—	
	32SOP				
Q-Voice™					
HT83004 HT83007 HT83010 HT83020 HT83038 HT83050 HT83R074 HT83074	28SOP	CICE860000004A	CPCB860000004A	EW-VMR (CADP28SOP-X)	HT83P06

Holtek Semiconductor Inc. (Headquarters)
No.3, Creation Rd. II, Science Park, Hsinchu, Taiwan
Tel: 886-3-563-1999
Fax: 886-3-563-1189

Holtek Semiconductorn Inc. (Taipei Sales Office)
4F-2, No. 3-2, YuanQu St., Nankang Software Park, Taipei 115, Taiwan
Tel: 886-2-2655-7070
Fax: 886-2-2655-7373
Fax: 886-2-2655-7383 (International sales hotline)

Holtek Semiconductor Inc. (Shanghai Sales Office)
G Room, 3 Floor, No.1 Building, No.2016 Yi-shan Road, Minhang District, Shanghai, China 201103
Tel: 86-21-6485-5560
Fax: 86-21-6485-0313

Holtek Semiconductor Inc. (Shenzhen Sales Office)
5F, Unit A, Productivity Building, Gaoxin M 2nd, Middle Zone Of High-Tech Industrial Park,
Shenzhen, China 518057
Tel: 86-755-8616-9908, 8616-9308
Fax: 86-755-8616-9722

Holtek Semiconductor Inc. (Beijing Sales Office)
Suite 1721, Jinyu Tower, A129 West Xuan Wu Men Street, Xicheng District, Beijing, China 100031
Tel: 86-10-6641-0030, 6641-7751, 6641-7752
Fax: 86-10-6641-0125

Holtek Semiconductor Inc. (Chengdu Sales Office)
709, Building 3, Champagne Plaza, No.97 Dongda Street, Chengdu, Sichuan, China 610016
Tel: 86-28-6653-6590
Fax: 86-28-6653-6591

Holtek Semiconductor (USA), Inc. (North America Salets Office)
46729 Fremont Blvd., Fremont, CA 94538
Tel: 1-510-252-9880
Fax: 1-510-252-9885

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