TL866CS TL866 MiniPro USB High Performance Universal Programmer

USB MiniPro TL866CS Universal BIOS Programmer EPROM FLASH 8051 AVR GAL PIC
support more than 13000 chips！！！

Performance：
Well-designed cheap professional programmer, Production of high-density SMD technology, a unified user interface, easy to use, fully functional, reliable program running of application software, ultra-small code，runs faster, supports bilingual(English and Chinese), it can automatically identify the operating system to install and run under WIN 2000/WIN XP/WIN 2003/WIN 2008/WIN VISTA/WIN7.
Note: The following performance list

★The great part of other development programmers are not comparable to its functions，that is not easy to reach.

★High Speed Programming：This programmer has Built-in MCU with high-performance and high-capacity USB interface ，at the communication speed of 12Mbps， being in line with (For each chip) well-designed programming algorithm and USB high-speed communications. It may be one of the fastest integrated development programmers, the speed has been met the needs of small-quantity efficient production.
Compared to similar products, some chips' programming speed is several times faster, even more than 10 times. For 4Mbits parallel FLASH ROM, the upgrade programmer (Version 3.01 or above) takes only about 35 seconds to finish programming (the total time of erase, write, verify). It only takes about 32 +79 seconds to read and write a 32MB TE28F320. In most cases, the parallel flash chip can be programmed at the same time it can be verified. The

programming will be immediately stopped if there is an error. It only takes about 12 sec (read) +18 sec (write) to read and write an 8 Mbits of serial 25P80. It only takes about 98 sec +160 sec to read and write a chip of 64MB capacity. It supports common 8-PIN and 16-PIN 25 series chip with large capacity.

Note: 16MB or larger capacity flash chip cannot be programmed by general programmers because of programming speed, while the TL866 programmer can widely support 64MB Serial and parallel series of chips to 48PIN. It provides with the remarkable quality that is distinct from other common programmer.

◆ support a wide range of chips: All kinds of 26, 27, 28, 29, 37, 39, 49, 50 parallel ROM, EPROM, EEPROM, 24, 25, 35, 85, 93, 95 Series EEPROM, Serial parallel ROM chips, fully supporting to the 48-PIN chips of 64Mbits capacity. It also supports a variety of models of 51 series of microcontroller, AVR microcontroller, including ATMEGA series, ATtiny Series, AT90XXX Series MCU, MICROCHIP PIC10 PIC12 PIC16 PIC18 MCU, programming of GAL programmable logic device, SRAM test, 54/74 and CMOS4000 series IC comprehensive function tests. At present, it can actually program more than 12000 chips. More chips will be supported in the process of the future upgrade.

---View: Click here to view the chip supporting list

★Unique ultra-low power: The whole programmer is equipped with the ultra-low power chips and it is furnished with electricity via USB Interface. It is the first comprehensive programmer to program all the chips without an external power supply. Their own power consumption is less than 20mA (it is 7mA when the programmer is not programming, LED power indicator use largest electricity, 5mA each one) and Programming power loss rate is less than 20% so that the programmer can supply the high VCC VPP programming electric current. Programmable chip can be provided with enough programming power (the largest programming power output is 2 watts that is impossible for a chip to use 2 watts of programming power). And you hardly feel the heat of the programmer after such long continuous work.

★easily portable performance: This is one of the smallest products in the world and the dimensions are 10CM*6CM*2.5CM (it is as small as a driving license). In addition, you don't need to carry with an external power supply because of its ultra-low power that makes it more portable.

◆Programmable programming power supply: VPP and VCC programming voltages are independently program-controlled: programmable VCC is from 3.3V to 6.5V; VPP is from 3.3V to 21V. The fluctuation of power supply is minor because of the multi-stage LC filter.

★Best overvoltage, overcurrent protection: VCC, VPP power supply of the Programmer is furnished with the independent Grade 3 overcurrent protection and the protection of automatically cutting off power supply. Each pin of 40-pin programming socket has VPP overvoltage protection. It can effectively prevent from putting a chip in the wrong place or short circuit due to other reason. In this programming case, it can also stop VPP high voltage from coming back to the internal of the programmer and damaging the device. Really make sure that the programmer will not be damaged when there is any worst-case short circuit. At the same time, the programmed chip can be efficiently protected.

This programmer will cut off the programming power supply VPP and VCC within 100us and send the message to the application program when there is short circuit. The programmer and PC won't be reset when there is short circuit because of the multilevel overcurrent protection.

◆ 40PIN universal pin: It is the most versatile pin among 40PIN quasi-universal pins. You don't need to move or turn around the chip when programming, just congruously put the chip forward and the handle direction of the programmer is the PIN1 place. Its design accords with the common operating habit of user.

◆This programmer is equipped with upgrading Function of the built-in hardware firmware program that can make sure your programmer's firmware flash and application software can be timely updated. You can complete the upgrade by downloading the upgrading program through the manufacturer's website.

★Second development function of chip serial number：This programmer has a variety of automatic numbering functions that are used commonly. You can get any serial number through DLL Dynamic Link Libraries by using the custom algorithm. In mass production, the function enables each chip to produce only one identifying information that can be encrypted by the custom algorithm. So you can effectively protect your rights as a customer.

★Unique universal serial programming interface ICSP：(Only TL866A can support, TL866CS cannot use this function)
This TL866A programmer can program through the 40-PIN universal socket and is provided with an ICSP serial programming port. For some in-circuit serial programmable chips, you can program MCU by choosing ICSP port. You can get the clear instruction diagram in the programming software for the ICSP port wiring method. That is to say, you can directly program and update the chip soldered on the board.
Note: Now ICSP can in-circuit serial program ATMEL89S51, ATMEL89S52, AT45DBxxx, a whole series of AVR ATMEGAxxx, MICROCHIP PIC10Fxxx 12Fxxx 16Fxxx 18Fxxx, as well as a full serial of SYNCMOS SM59Dxx SM59Rxx. The variety of microcontroller that can be supported in-circuit programming will be continually increased in the future. Six ICSP wires of this programmer, except a ground wire, other wires led full functional I2C, SPI and UART serial main wire, be suitable for all kinds of serial communication. In addition, each wire can supply VCC, VPP or GND with high current.

★superb 54/74F/LS/HC CMOS4000 series IC functional tests: This is the first development programmer to test the common logic integrated circuit and this test can be located the errors of logic gate circuit, as well as test any possible input combinations of integrated circuit.

◆Programmer self-testing function: This programmer can test itself on each pin of VPP, VCC, GND and I/O information, at the same time it can run an inside short-circuit test on VPP, VCC current.

★AVR microcontroller one-to-one soft encryption: AVR microcontroller has an RC Calibration (calibrate bytes). Only one of dozens of chips may have the same bytes value and it cannot be modified. Microcontroller software can read this value and determine whether the code is used by other chips. Through custom encryption algorithm, it can stop those who decrypt chips with ulterior motives from directly using. The encryption algorithm is so complex that it is not easy to decrypt. But, about "encryption", there is a problem for developers - each chip is different - it is impossible to manually calculate one by one and respectively compile source code if the algorithm is complex. This programmer can automatically read into RC bytes before programming. The developer can get the bytes value of the chip in the DLL dynamic function and then automatically calculate the encrypted data according to the request and put it in the memory, efficiently completing mass production. (A detailed encrypted instance of the ATMEGA8 in the installation package is available for reference)

★Unified and convenient user interface: The user interface is well-designed and is in complete accord with the operating habit of the Windows series of software. Built-in binary editor is comparable to pure professional editing software. You can directly read, write and modify the files such as BIN format, HEX format, JED format and so on. In addition, it has the complete and practical project mode that makes the mass production more convenient and safer.

◆All kinds 26 27 28 29 37 39 49 50 Parallel ROM, EPROM, EEPROM
High-speed and wide-support
It can support TSOP32 TSOP40 TSOP48 chip to 64MBits and the programming speed is 5-10 times as fast as the similar.
◆24 25 35 45 85 93 95 Series EEPROM
It can widely support series chips and the 8-16 PIN 25 series chips can be supported to 64MBits capacity.
◆ Hundreds of the 51 series microcontroller
◆ AVR microcontroller, including ATMEGA series, ATtiny series, AT90XXX series microcontroller
AVR microcontroller can complete a one-to-one soft encryption by RC calibrating bytes.
It can support high-speed parallel programming and at the same time all AVR ATMEGAxxx chips can be supported SPI series download programming by using ICSP interface.
TQFP64, TQFP100PIN AMEGAxxx chips can be supported.

◆Microchip PIC10 PIC12 PIC16 PIC18 Series microcontrollers:
As for PIC series chips, it can support more than 300 models and more than 900 types of packages. It is one of the most comprehensive programmer of supporting PIC chips. For all kinds of PIC chips, it can program with optimization and high speed strictly according to the manufacturer manual. For the majority of chips, it can support ISCP in-circuit programming and at the same time it can program by using programming socket.
◆ GAL programmable logic device programming
It can support the common PLD device.
◆ SRAM Test
It can support common 24 61 62 DS12 series SRAM test, respectively data line testing, the address line testing, memory cell incremental testing and unit testing.
◆superb performance in 54/74F/LS/HC CMOS4000 series IC comprehensive function test:
This is the first development programmer that can test common logic IC. This test can locate the logic gate errors and get any possible input combinations of IC.
Programmable chips12700 +, the upgrade process will add more chip support.
At present, it can support more than 12700 chips and the types will gradually increase in the future upgrade.

detailed list of supporting chips:

Here, the real testing programming time that common chips need to spend is listed. These chips are not intended to pick out and you can see the similar chip reference table for the similar. The programming time is proportional to the capacity. That is to say, for the similar chip, the larger capacity the chip has, the more time the programming spends. Compared to similar products, some chips' programming speed is several times faster, even more than 10 times. For 4Mbits parallel FLASH ROM, the upgrade programmer (Version 3.01 or above) takes only about 36 seconds to finish programming (the total time of erase, write, verify). It only takes about 32 +79 seconds to read and write a 32MB TE28F320. In most cases, the parallel flash chip can be programmed at the same time it can be verified. The programming will be immediately stopped if there is an error. It only takes about 12 sec (read) +18 sec (write) to read and write an 8 Mbits of serial 25P80. It only takes about 98 sec +160 sec to read and write a chip of 64MB capacity. It supports common 8-PIN and 16-PIN 25 series chip with large capacity. So the programming speed is far beyond comparison.
     Note: 16MB or larger capacity flash chip cannot be programmed by general programmers because of programming speed, while the TL866 programmer can widely support 64MB Serial and parallel series of chips to 48 PIN. It provides with the remarkable quality that is distinct from other common programmer.

Total time = erase time + programming time + check time

    The programmer in strict accordance with manufacturers require programming, and will never sacrifice the

reliability of the programming in order to improve programming speed.

    This programmer can work strictly according to the manufacturer manual and never sacrifice the programming

reliability in order to improve programming speed.

Common ROM chip programming time: (Unit: second)

Type	IC	Capacity	Erase	Read /verify	write	Read+write	remarks
27Cxxx	27C512	512Kbits	/	2S	20.8S	22.8S	28PIN
	27C010	1Mbits	/	4S	34.2S	38.2S	32PIN
	27C1024 16bit	1Mbits	/	4.1S	19.6S	23.7S	40PIN
FLASH 27Cxxx	W27E257	256Kbits	0.1S	1S	10.4S	11.5S	28PIN
	SST27SF512	512kbits	0.1S	1.4S	20S	21.5S	28PIN
	W27C010	1Mbits	0.2S	2.3S	33.4S	35.9S	32PIN

FLASH EEROM	N28F020	2Mbits	0.6S	3.1	10.7	14.4S	32PIN
	AT29C020	2Mbits	0.2S	3.1	10.9	14.2S	
	W29C020	2Mbits	0.3S	3.1	11S	14.3	
	AM29F040	4Mbits	7.9S	9.2S	26	43.1S	
	M29F002	2Mbits	2.5S	4.6S	19.5S	25.6S	
	SST39SF020	2Mbits	0.4S	3.6S	15.6S	19.6S	
	AT49F002	2Mbits	1.2S	3.6S	16.4S	11.2S	
	W39V040AP	4Mbits	0.1S	9.2S	27S	36S	
	M50FW040	4Mbits	7S	9.2S	25	41.2	
	INTEL82802AB	4Mbits	4S	9.2S	25S	38	
	AM29F200	2Mbits	3.7	2.0	8.6	14.3	48PIN
	AM29LV160DB	16MBits	27	16	50	83	
	TE28F320C3B	32Mbits	29	32	79	130	
	AT48BV8192A	8Mbits	5	8	28	41	
Serial EEPROM	24C02	2048bits	/	0.1S	0.3S	0.4S	8-16PIN
	AT24C256	256Kbits	/	4.2S	8.2S	12.4S	
	AT24C512	512Kbits	/	8.4S	13.5S	21.9S	
	25080	8192bits	/	0.01S	0.1S	0.1S	
	25320	32Kbits	/	0.1S	0.5S	0.6S	
	25LC1024	1Mbits	0.2S	1.5S	3.9S	4.6S	
	EN25T80	8Mbits	8.4S	12S	18S	38.4S	
	MX25L8005	8Mbits	5.8S	12S	17S	34.8S	
	MAX25L6405	64Mbits	42S	98S	166S	302S	
	95320	32Kbits	/	0.1S	0.5S	0.6S	
	35080	8192bits	/	0.1S	0.1S	0.2S	
	93C46	1024bits				0.1S	
	93CS56	2048bits	0.1	0.1	0.4	0.6S	
	93C66	4096bits	0.1	0.1	1.2	1.4S	
	93C86	8192bits	0.1	0.1	2.4	2.6S	

IC	Erase	Read C	Write C	Read E	Write E	Total T	Remark
AT89C51 4K	0.3	0.3	5.3	/	/	5.9	
AT89S52 8K	0.3	0.4	1.1	/	/	1.8	
AT89S8253 12K+2K	0.3	0.7	3.7	0.1	0.7	5.5	
AT89C4051 4K	0.2	0.2	6.4	/	/	6.8	20P
SST89E58 32K+8K	0.3	1.5	3.5	0.4	0.8	6.5	
SST89E564 64K+8K	0.3	3.0	7.0	0.4	0.8	11.5	
ATMEGA8 8K+512	0.05	0.3	1.8	0.1	0.5	2.8	
ATMEGA48 4K+256	0.05	0.1	0.9	0.1	0.1	1.25	
ATMEGA162V 16K+512	0.1	0.6	2.5	0.1	0.4	3.7	
ATMEGA8515 8K+512	0.1	0.3	1.8	0.1	0.5	2.8	
ATTINY13 1K+64	0.02	0.1	0.7	0.01	0.04	0.9	8P
ATTINY2313 2K+128	0.01	0.1	0.7	0.02	0.04	0.9	
PIC10F222 1K	0.2	0.1	1.0	/	/	1.3	
PIC12F629 2K+128	0.1	0.1	2.2	0.1	0.3	2.8	
PIC16F873A 8K+128	0.1	0.5	4.5	0.1	0.8	6.0	
PIC18F4550 32K+256	0.5	3.7	5.6	0.3	1.2	11.3	
PIC18F67J10 128K bytes	0.5	16	20	/	/	36.5	
PIC16C712 2K	/	0.1	0.9	/	/	1.0	
PIC16C74B 8K	/	0.4	3.5	/	/	3.9	
GAL16V8	0.8	1.4	3.4	/	/	5.6	

 Model: AUTOELECTRIC TL866CS
- Color: Grey
- Material: Plastic housing
- Fast programming speed
- Low consumption
- USB power supply, no external power supply needed
- 40 pin over voltage protection; VPP, VCC class 4 over current protection
- Wide range chipset 6000 + support, support serial series, parallel series chip thousands of species.
40/44/48 pin
large capacity flash
- ICSP serial programming interface
- Test CMOS4000 74/54 series of integrated circuit, Can positioning to gate error
- Complete chip serial number function
- Supports Windows 2000 / XP / 2003 / 2008 / Vista / 7 32-bit
- Please refer to http://www.autoelectric.cn for more details
- Packing list:
- 1 x Programmer
- 1 x USB cable (110cm)
- 1 x CD

Dimensions: 4.02 in x 2.44 in x 1.26 in (10.2 cm x 6.2 cm x 3.2 cm)
Weight: 4.76 oz (135 g)