

XGecu® Pro

T48 UNIVERSAL PROGRAMMER

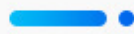
TL866 3RD GENERATION



Support: 30000+

15 years of R&D history | Professional performance

**Stability Faster
Reliability Easy to use**



T48 Universal Programmer

40P industrial socket



Pluggable
Replaceable



Wide range of support

1、 EMMC

2、 PARALLEL NAND

3、 SPINAND

4、 GAL/PAL

5、 MCU (51/AVR/PIC)

6、 EPROM 27/28/29/39/49/50

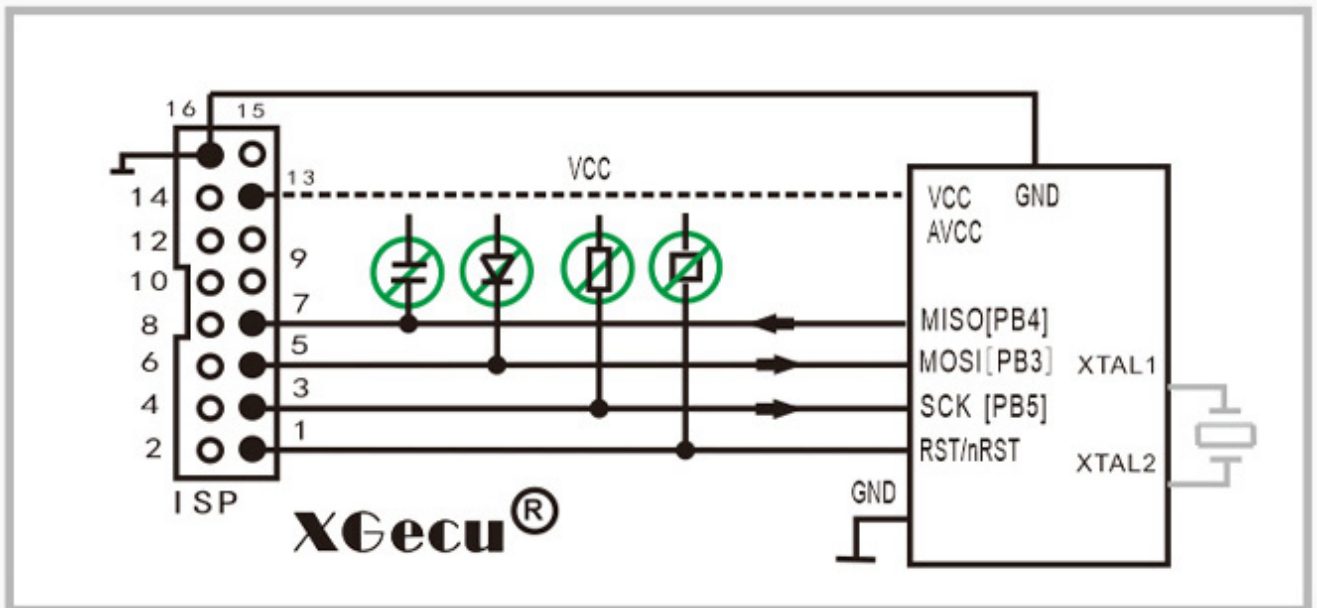
7、 SERIALS: 24/25/26/35/45/93/95

8、 74 LOGIC IC VISUAL TEST

9、 SRAM TEST



16P Multi-functional ISP



ISP schematic diagram in the APP

High-performance high-tech products

- **GD25Q128 (128Mb SPI Nor Flash)**
programming + verify Time: 35s
- **MX35LF1G (1Gb SPI Nand Flash)**
programming + verify Time: 80s
- **MT29F1G08 (1Gb Parallel NAND)**
programming + verify Time: 45s
- **EN29LV320 (4MB Parallel Nor Flash)**
programming + verify Time: 26s

You will enjoy: T48 vs ?

Speed compare table

	T48(TL866-3G)	T56	TL866LL PLUS	NOTE
W25Q80 (1MB Full 100% data)	3.5s+0.3s (30MHZ)	3.5s+0.2s (50MHZ)	5.0s+1.6s	T48 is 5 times faster than TL866II
SPI NOR FLASH GD25Q128 (16MB Full 100% data)	30s+5.4s (30MHZ)	30s+3.5s (50MHZ)	55.0s+26.0s	The 48/T56 has the same time for programming , because it has almost reached the limit speed that the SPI Nor Flash chip can be programmed. T48 is 5 times faster than TL866II
SPI NAND MX35LF1GE4AB (1Gb about 60% data)	46s+27s (x1 MODE)	16s+19.5s (x4 MODE)	Not Supported	Real data of a device tested
P_NAND (1Gb about 80% data) MT29F1G08ABAEA	27s+17s	13s+12s	208s+130s	Real data of a device tested T48 is 8 times faster than TL866II
4G MTFC4GL (50% data)	Read 207s/Verify 125s (40MHZ)	Read 165s/Verify 125s (40MHZ)	Not Supported	Note: When the data is 100% full, the read and write speed of T48 is almost the same as that of T56, and the ISP speed is the same
P_NOR FLASH EN29LV320 TSOP48	24s+1.9s	22s+0.9s	155s+28s	T48 is 8 times faster than TL866II
W27C512	30s+0.3s	12s+0.1s	30s+1.0s	Little different
W29C020	8.3+0.1s	7.4s+0.1s	9.5s+0.2s	Little different

Hardware parameters

- 16-bit MCU 120MHZ, USB2.0 HS 480MHZ transmission
- 40P+16P=56 pin IO design. All pins are high reliability.
- Stable and reliable 16Pins in-circuit programming interface, the wire length is more than 25CM, and it can communicate reliably with a maximum clock frequency of 30MHZ-40MHZ
- VCC voltage 1.2-6.5V 64 levels adjustable, VPP voltage 6.5-25V 64 levels adjustable. IO communication signal voltage adjustable VCC 120MA-320MA overcurrent protection continuously adjustable VPP 120MA overcurrent protection.
- Power consumption: 5V <500MA. All chips do not need external power supply. The programmer has multiple protections : overvoltage protection / reverse connection protection / overcurrent protection / low voltage prompt.
- Open self-test function, self-check each VPP/VCC /GND/IO

VISUAL PIN CONTACT CHECK

LOCATE TO PIN

Chip Read APP Version: 12.10 Device Model: T48 [TL866-3G]

Read Range **PC28F00AP33BF**
 FLASH Start Addr: End Addr:
 Register.OTP
 Config

Use Adapter:ADP-BGA64-EX-C

Save Log

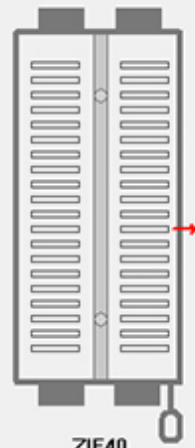
Adapter: ADP_BGA64_EX-COK
Bad Pin: ZF29
Bad Pins Found, Cancel / Retry / ignore to Continue Programming ?
Pay attention to the chip placement direction

View Adapter

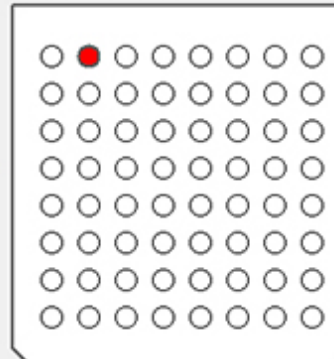
Read

BACK

Location in Socket



BGA64 (TOP View)



PACKAGE TYPE

DIP

SDIP

PLCC

SOIC

SOP

TSOP32

TSOP40

TSOP48

TSOP56

BGA24

BGA48

BGA63

BGA64

BGA100

BGA153

BGA162

BGA169

BGA221

74 LOGIC IC VISUAL TEST

Logic Test

Search: 4053

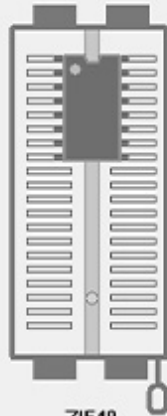
4053
4054
4050
4053
4056
4057
4058
4059
4070
4071
4072
4073
4075
4076
4077
4078
4081
4082
4085
4093
4094

Vector Symbol definition
 0: Input Low
 1: Input High
 L: Out Low
 H: Out High
 C: Pulse Input
 Z: High Impedance
 OC High or 3S
 X: Ignore
 G: GND
 V: VCC

VCC VOLTAGE
 5.0V
 3.3V
 2.5V
 1.8V

Export
Import

IC Position



ZIF40

Result	LINE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Normal	0001	Z	Z	Z	Z	Z	1	G	G	X	X	X	Z	Z	Z	Z	Y
Normal	0002	Z	L	Z	0	L	0	G	G	0	0	0	L	Z	0	0	Y
Normal	0003	Z	H	Z	1	H	0	G	G	0	0	0	H	Z	1	1	Y
Normal	0004	H	Z	H	1	Z	0	G	G	1	1	1	Z	H	1	1	Y
Normal	0005	L	Z	L	0	Z	0	G	G	1	1	1	Z	L	0	0	Y
Normal	0006	Z	Z	Z	Z	Z	0	G	G	0	0	1	Z	L	0	Z	Y
Normal	0007	Z	Z	Z	Z	Z	0	G	G	0	0	1	Z	H	1	Z	Y
Normal	0008	L	Z	Z	Z	Z	0	G	G	0	1	0	Z	Z	Z	0	Y
Normal	0009	H	Z	Z	Z	Z	0	G	G	0	1	0	Z	Z	Z	1	Y
Normal	0010	Z	Z	L	0	Z	0	G	G	1	0	0	Z	Z	Z	Z	Y
Normal	0011	Z	Z	H	1	Z	0	G	G	1	0	0	Z	Z	Z	Z	Y

All Vector Testing Normal

Vector Table and Test Result

TEST Auto Find BACK

SRAM TEST

Chip Test APP Version: 12.10 Device Model: T48 [TL866-3G]

Test Range

6116

FLASH

Start Adr: -----

End Adr: -----

Data Bus

Increase

Address Bus

Unit

Test Result: Normal!

Bad Pin: ZIF1 - PIN#1

Bad Pins Found, Cancal / Retry / ignore to Continue Programming ?

Pay attention to the chip placement direction

Pins Detected Passed!

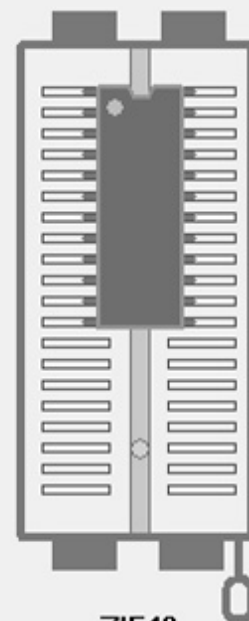
Test Result: Normal!



Test

BACK

Location in Socket



ZIF40

NAND function introduction

- **Speeds up to 3.2M Bytes / s of S_NAND , 6MB/s of P_NAND, MAX capacity:256G**
- **Support ISP in-circuit programming for SPI NAND**
- **Function**
 - 1、 Support OTP programming
 - 2、 Support internal ECC on/off function
 - 3、 Support UID (unique signature) reading
 - 4、 Support multiple partition and multiple file operations
 - 5、 Support NAND parameter custom function, (new chips can be added by custom parameters)
 - 6、 The programming clock speed and VCC/VIO voltage is adjustable.
 - 7、 Support 1.8V and 16bits device.
 - 8、 Support ISP programming of SPI NAND (MAX 3.2MB/s).
 - 9、 Package type: DIP8/SOIC8/SOIC16/WSON8/BGA24/BGA63/TSOP48

EMMC function introduction

- Read and write speeds up to 17M Bytes / s, MAX capacity:256GB

- **Support ISP in-circuit programming**

1b MODE speed: 4.7MB/s 4b Mode 17MB/s

- **Analysis EMMC function**

show emmc manufacturing and device life time information

show memory usage of 8 partitions

Each partition shows whether it is write protected

Shows whether the entire chip is temporarily or permanently write protected

Show whether the chip is password protected

Show whether the emmc uses a 32-bit security authentication code to write to the RPMB.

Show other important parameters of ECSD/CSD/CID

- **Read/write functions (all functions can be completed with one-key)**

- 1、 Read CID CSD ECSD.
- 2、 Clear full-chip temporary write protection before programming
- 3、 Clear temporary write protection groups before programming
- 4、 Erase chip before programming
- 5、 Blank check the chip before programming
- 6、 Programming 32-bit authentication key

- 7、 password verification
- 8、 Partition Config
- 9、 Read and Programming to BOOT1
- 10、 Read and Programming to BOOT2
- 11、 Read and Programming to RPMB
- 12、 Read and Programming to GPP1/GPP2/GPP3/GPP4
- 13、 Read and Programming user data(User Area)
- 14、 Setting temporary write protection groups
- 15、 Setting permanent write protection groups
- 16、 Setting password(or reset password)
- 17、 Programming ECSD
- 18、 Programming CSD
- 19、 Automatically verify all the above operations after Programming

25s(Flash/Nand) Automatic Identification

Auto Search 25 Flash or VGA_HDMI_ISP

function description
Only for 8/16 Pins or VGA_HDMI_ISP 25s Nor/SPI Nand Flash Memory. after detecting completely, Push < Select > button to automatic selection

Pin Counts or VGA_HDMI_ISP

8 Pins
 16 Pins
 VGA_HDMI_ISP

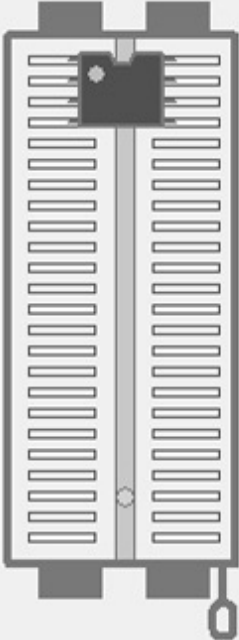
2 Model with the same ID was found
please select one

Model: **MACRONIX(HXIC) MX35LF1GB4AB(x4)**

Manufactory

Detect Select Cancel

Location In Socket



The diagram shows a 25-pin socket with a component inserted. The component has two rows of pins, with a central notch. A small circle is visible on the component, likely indicating a specific pin or feature.