

How to program S29GL128N with ezoflash4v5 and adapter tsop48d3 ?

Basics.

Programmer ezoflash4v5, adapter tsop48d3 and Willem software support high density 64-128Mb (29LV640, 29LV128, S29GL640, S29GL128,) chips programming in 16bit mode.

Operations are tricky with following restrictions:

1. Use of equal lower density chip algorithm.
Most Willem software versions support highest density 32Mb in 16bit mode.
2. Willem software don't support extended 3-byte chip ID read .
For high density chips most common get ID reply - 0x0001 AMD , 0x227E.
Utility *extID_erase16.exe* allow confirm full chip identity.
3. High density chips require longer erase time than assigned in Willem software for 32Mb chips. Usually software command *Chip erase* return message *Error erasing chip* due to timeout. Utility *extID_erase16.exe* allow erase entire chip within defined time-out period 300 seconds.
4. Read chip in 32Mb blocks. Adapter jumpers allow select related block within chip memory area. Apply utility *Winsplit.exe* to merge read files.
5. Apply utility *Winsplit.exe* to split source in 32Mb files. Write chip in 32Mb blocks. Adapter jumpers allow select related block within chip memory area.

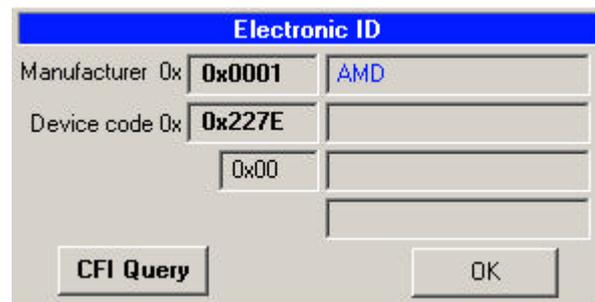
Step 1.

1. Be sure your programmer and adapters are functionally approved (used before ok, programmer and adapters assembled correctly, programmer pass Test H/W signals checking).
2. Desolder chip for reprogramming from your device. Apply flux and hot air soldering iron. Be carefully with temperature selection and hot air process to avoid chip and board overheating.
3. Check chip S29GL128, pins are straight . Apply soldering iron, desoldering braid and flux to remove extra solder (for desoldered chips) , to coat with tin (for new chips).
4. Check adapter chip pads. Apply flux and soldering iron to create plain flux and solder pad layer. Apply desoldering wire to remove extra solder.
5. Place chip S29GL128 on adapter tsop48d3 according marking points and start soldering from corner pins. Apply soldering iron with fine tips and minimum of solder from small diameter solder wire with alloy. In case of soldering shorts between pins remove with soldering braid.
Apply magnifier, magnifier glasses or microscope in good light.
6. Check visually chip pins soldering (soldered, no shorts). Apply cleaner to remove flux.
7. Some pictures of materials and process find in http://www.ezoflash.com/create_pcb.htm , section 10-11

Step 2.

1. Apply Willem software 0.98d12c3. Installing package
<http://www.ezoflash.com/downloads/software/098d12c3.zip>
2. Set programmer jumpers Jp2 (+3.6V), Jp5 (A18) , Jp6 (default), Jp98 (SW 0.98)
3. Connect parallel port extension cable to PC and programmer.
4. Run 0.98d12c3.exe
5. Willem software - Select device *Flash 16bit_TSOP48 > 29LVx00 > Am29DL322*

6. Connect power supply (+14..18V, middle pin positiv voltage) to programmer.
Check – only red LED flash.
7. Set tsop48d3 jumpers JpB (tsop56/pin11-A19), JpD (tsop56/pin15-A21), JpF (A21- log.0), JpH (A22-log.0)
8. Connect adapter tsop48d3 with programmer ezoflash4v5
9. Willem software – *Action > Get ID*. Expect reply



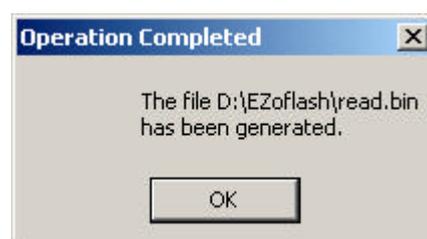
10. Another ID returned, disconnect power supply. Recheck connections, settings and chip solderings. Connect power supply and repeat get ID with valid Electronic ID reply.

Step 3. Read chip.

1. Set adapter jumpers JpF (A21- log.0), JpH (A22-log.0), memory area 0-32Mb.
2. Read chip. Save result as read1.bin
3. Remove jumper JpF (A21- log.1), set JpH (A22-log.0), memory area 32-64Mb.
4. Read chip. Save result as read2.bin
5. Set jumper JpF (A21- log.0), remove JpH (A22-log.1)memory area 64-96Mb.
6. Read chip. Save result as read3.bin
7. Remove jumpers JpF (A21- log.1) and JpH (A22-log.1), memory area 96-128Mb.
8. Read chip. Save result as read4.bin
9. Rename read files (size 4096KB) read1.bin > read.bin.1, read2.bin > read.bin.2, read3.bin > read.bin.3, read4.bin > read.bin.4
10. Run utility Winsplit, <http://www.ezoflash.com/downloads/software/Winsplit.zip>
11. *Enter file name* , select from directory *read.bin.1*

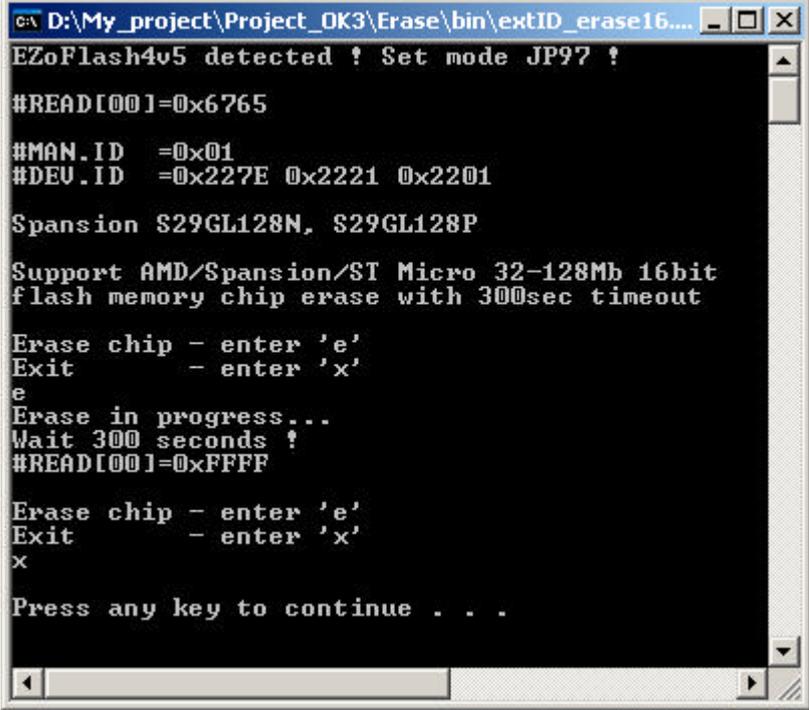


12. *Join*. Find result file *read.bin* in directory, size 16384KB.



Step 4. Erase chip

1. Remove adapter. Change programmer jumpers from Jp98 to Jp97. Insert adapter.
2. Set adapter jumpers JpF (A21-log.0), JpH (A22-log.0)
3. Get utility http://www.ezoflash.com/downloads/software/extID_erase16.zip
Extract file and place both files in the same directory.
4. Run utility *extID_erase16.exe*



```
C:\ D:\My_project\Project_OK3\Erase\bin\extID_erase16...
EZoFlash4v5 detected ! Set mode JP97 ?
#READ[00]=0x6765
#MAN.ID =0x01
#DEV.ID =0x227E 0x2221 0x2201
Spansion S29GL128N, S29GL128P
Support AMD/Spansion/ST Micro 32-128Mb 16bit
flash memory chip erase with 300sec timeout
Erase chip - enter 'e'
Exit - enter 'x'
e
Erase in progress...
Wait 300 seconds !
#READ[00]=0xFFFF
Erase chip - enter 'e'
Exit - enter 'x'
x
Press any key to continue . . .
```

5. Utility

- detect programmer type;
 - read first word from chip memory area (expected to be different from 0xFFFF for un erased chip);
 - read chip ID – manufacturer ID and 3 byte/word device ID;
 - from ID find chip manufacturer and type;
 - wait next command
6. Enter symbol **e** to erase entire chip and wait 300 seconds. Utility read first word from chip memory area (expected to have 0xFFFF for erased chip).
 7. Enter symbol **x** to exit . Close utility window.
 8. Remove adapter. Change programmer jumpers back from Jp97 to Jp98. Insert adapter.

Step 5. Write chip.

1. Run utility Winsplit.
2. *Enter file name* , select from directory target file, like *source.bin* with size 16384KB (128Mb)
3. *Package size* enter 4096 Kb
4. *Split*.



5. Utility reply *Done (5) parts*.
Find in directory files *source.bin.1*, *source.bin.2*, *source.bin.3* and *source.bin.4* with size 4096KB. Delete file *source.bin.5* with size 0B.
Rename files *source.bin.1* to *source1.bin*, *source.bin.2* to *source2.bin*, *source.bin.3* to *source3.bin*, *source.bin.4* to *source4.bin*
6. Set adapter jumpers JpF (A21- log.0), JpH (A22-log.0), memory area 0-32Mb.
7. *Action > Blank check. Load file source1.bin. Action > Program.*
8. Remove jumper JpF (A21- log.1), set JpH (A22-log.0), memory area 32-64Mb.
9. *Action > Blank check. Load file source2.bin. Action > Program.*
10. Set jumper JpF (A21- log.0), remove JpH (A22-log.1), memory area 64-96Mb.
11. *Action > Blank check. Load file source3.bin. Action > Program.*
12. Remove jumpers JpF (A21- log.1) and JpH (A22-log.1), memory area 96-128Mb.
13. *Action > Blank check. Load file source4.bin. Action > Program.*
14. Your chip is programmed.

Step 6.

1. Disconnect power supply from programmer.
2. Close Willem software.
3. Remove adapter from programmer.
4. Desolder chip from adapter. Apply flux and hot air soldering iron.
Be carefully with temperature selection and hot air process to avoid chip and adapter board overheating.
5. Solder chip in your device , follow hints in Step 1
6. Check your device functionality.

Comments.

1. Chip programming is equal with programmer ezoflash4v4.
Apply Willem software 0.97ja or 0.97d12c3.
2. Chip can be programmed on any Willem programmer.
Apply adapter tsop48d3 and crossadapter ezowill.
3. Previous utility version erase2.exe support chip erase.
Be carefully, here erase starts automatically.
4. Willem software and utilities don't support chips with locked sectors, can't manage chip security sector.
5. Apply Surface Mount 0.5mm TSOP-56 Socket Meritec 980020-56-01 for regular chip programming purposes. Note, adapter with TSOP56 Meritec socket don't support chips in TSOP48 package anymore.

Useful links

1. http://www.ezoflash.com/adapters/tsop48d3/suported_chips.htm
2. http://www.ezoflash.com/downloads/chip_test.zip
3. http://www.ezoflash.com/chip_database.php
4. topic <http://www.ezoflash.com/forum/viewtopic.php?f=3&t=1859> (in russian)
5. Ask help and share your experience in EZoFlash forum
<http://www.ezoflash.com/forum/index.php>

Get a look to adapter fbga64_a1 supporting chip

S29GL128 in package FBGA-64 (LAA064, 13x11mm)

http://www.ezoflash.com/adapters/fbga64a1/fbga64_a1_pics.zip

Any comments or suggestions on mentioned guide mail info@ezoflash.com