



Standalone-Gang8 User's manual

V1.00

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I. Introduction

1. Features

Standalone-Gang8 is a high performance Gang programmer of ABOV Semiconductor. It supports all kinds of ABOV MCU devices (Flash, EEPROM, OTP, MTP). It can program 1 ~ 8 devices at once.

- Base system : IBM compatible PC mother board
CPU : AMD Geode LX800 500MHz
HDD : Flash memory 4GB
RAM : 512MB
- OS : Microsoft Embedded XP
S/W update is very easy, because it is a PC
- Support all of ABOV MCU devices
- High programming speed
- Over current protection
- Support self test function
- Using pack board for each device group
- Support all kinds of socket adaptors for various package type
- User interface
Hardware default : 4 x 4 key pad, 4line LCD panel
option : PC keyboard, mouse, monitor, etc
- Light weight : aluminum case
- Power : AC100 ~ 220V, 50/60Hz



2. Components

Base system



Pack board (Option : SOP type)



Pack board (Option : DIP type)



Pack boards are prepared for each device group and package type.

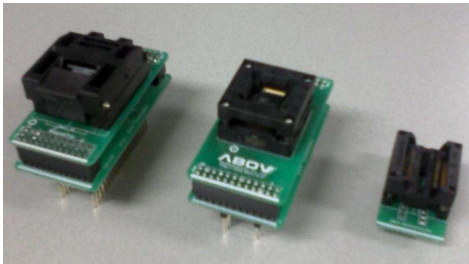
CAUTION
Check the Standalone-Gang8 system's power is off when you insert or change Pack board.
If power was on, system or pack board may be destroyed seriously

3. Accessories

Device package convertor

It can support various device package type (TSSOP, QFN, QFP package type).

You have to check the convertor supports your target device.
Even if the same package, each devices use different convertor.



4. Caution

Power On/Off sequence is very important, because Standalone-Gang8 is a PC and it is operated by Operating System (Embedded XP)

If you ignore this, system will be damaged and it will not operate anymore.

- Do not plug out the power cable during system is operating.
- Wait system booting time when you system power on.
Click system power switch and wait until system power on automatically.
Standalone-Gang8's LCD displays "Please wait ..." during boot up.

Ex) display of LCD panel

```
Please wait ...
```

- Wait system shutdown time when you system power off
Click system power switch and wait until system power off automatically

Ex) display of LCD panel

```
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Standalone GANG8
S/W:SDHa H/W:BSLee
V1.01 (2009. 3)
```

We do not provide virus vaccine.

- We do not recommend that connecting Standalone-Gang8 and internet directly.
As you know, internet virus is very harmful.
- If you want to connect it to internet directly, you have to install virus vaccine first.

CAUTION

We will ask the OS charge when user's Standalone-Gang8 system's OS has been destroyed.

It is considered that user's carelessness.

II. H/W Operation

1. Key pad assign



Series	Device	<u>Config</u>	↑
Clear PASS		🔊	↓
		Version	↩
Read	Blank	Verify	Esc

Up / Down arrow keys are used item selection in each menu.

'Esc' key is used cancel the selection.

Select button (upper button of 'Esc' button) is used selection.

Menu structure is constructed for easy use that anyone can understand its function.

Data editing is not allowed to prevent user's mistake when user's mass programming.

Each menu does not have menu level.

It means that you do not need to press 'Esc' key to escape current menu

For example, you can press 'Blank' button and check device's blank state when you are in configuration menu.

2. Device select

Series

You can change device series from current device series.

If you select device series, then Standalone-Gang8 move and show device select menu.

You can select your target device from device menu.

Ex) display of LCD panel

```
Device series select
sel-> 40P...
      80F0...
```

Device

You can change device from current device.

Ex) display of LCD panel

```
Device select -----
      40P5101
sel-> 40P5201
      40P5301
```

If target device was changed, Standalone-Gang8 will re-configure its internal FPGA logic.

Wait until FPGA configuration end.

Ex) display of LCD panel

```
Initialize FPGA ...
```

The FPGA is initialized, and then Standalone-Gang8 display device name, checksum, configuration.

If target device is changed, PASS counter is cleared.

PASS counter is used to show accumulated programming pass devices count to LCD panel

Ex) display of LCD panel

```
40P5201          0
CS:F942  cfg:FFFFFFFF
```

3. Device configuration

Config

You can see or change device configuration here.
 Configuration frontward 4byte value will be displayed top line.

Ex) display of LCD panel

```
Config.val: FFFFFFFF
->Protect NO
    fOSC/48 speed
```

Select new configuration value or close it.

Ex) display of LCD panel

```
Sub configuration --
->Protect NO
    Protect OK
```

4. Device read

Read

Standalone-Gang8 read a device from master gang (G1), it reads device's code memory and configuration value.

The data will be stored Standalone-Gang8 system's HDD, and it will be used to program next time.

PASS counter is cleared automatically.

Ex) display of LCD panel (Before Read)

```
40P5301          0
CS:0C3C  cfg:FFFFFFF
```

Ex) display of LCD panel (Reading)

```
40P5301          0
Read            0000
  busy  --  --  --
    --  --  --  --
```

Ex) display of LCD panel (After Read)

```
40P5301          0
CS:F942  cfg:FFFFFFF
  OK  --  --  --
    --  --  --  --
```

5. Device blank check

Blank

It examines devices are blank or not.

Ex) display of LCD panel (Blank testing)

```
40P5301          0
Blank            0000
  busy busy    --  --
    --  --    -- busy
```

Ex) display of LCD panel (After Blank test)

```
40P5301          0
CS:F942  cfg:FFFFFFFF
  OK   NG    --  --
    --  --    --  OK
```

6. Device verification

Verify

It compares device's code memory, configuration value to Standalone-Gang8's buffer.
 In general, verify function checks only one time.
 But, some device asks one more verify with different voltage level.

Ex) display of LCD panel (Verify 1 testing)

```
40P5301          0
Verify 1         0000
  busy busy    --  --
    --  --    -- busy
```

Ex) display of LCD panel (Verify 2 testing)

```
40P5301          0
Verify 2         0000
  busy busy    --  --
    --  --    -- busy
```

Ex) display of LCD panel (After Verify test)

```
40P5301          0
CS:F942  cfg:FFFFFFFF
  OK   NG    --  --
    --  --    --  OK
```

7. Clear pass counter

Clear PASS

Standalone-Gang8 counts and remember programming passed device count for current device.

And, it is displayed upper side.

Clear PASS button's function asks clear pass-counter or not to user.

Ex) display of LCD panel (accumulated programming pass count value is 124)

```
40P5301          124
CS:F942  cfg:FFFFFFF
  OK   OK   --   --
  --   --   --   OK
```

Ex) display of LCD panel

```
Clear PASS-counter
->No (Remain)
  Yes (Clear)
```

8. Sound volume control

Speaker

It changes speaker sound volume.

Volume level is between 0 and 15, 0 is mute, 15 is largest volume.

Ex) display of LCD panel

```
Speaker volume -----
Use Up Down key only

07 >>>>>>
```

9. Software version

Version

it displays current S/W version.

Standalone-Gang8 software will be updated frequently.

For example, add new device, modify or improve programming algorithm, etc.

You can find Standalone-Gang8 program setup package from our

homepage (<http://www.abov.co.kr>).

Ex) display of LCD panel

```
ABOV Semiconductor
Standalone GANG8
S/W:SDHa H/W:BSLee
V1.01 (2009. 3)
```

10. Device programming

Auto

It program device code memory and configuration, and then it verify devices were programmed correctly or not.

Standalone-Gang8 enumerates passed device count and add it to PASS counter and display it.

Ex) display of LCD panel (Programming)

```

40P5301          0
Program          0000
  busy busy    --  --
    --  --    -- busy
    
```

Ex) display of LCD panel (Verify 1 testing)

```

40P5301          0
Verify 1         0000
  busy busy    --  --
    --  --    -- busy
    
```

Ex) display of LCD panel (Verify 2 testing)

```

40P5301          0
Verify 2         0000
  busy busy    --  --
    --  --    -- busy
    
```

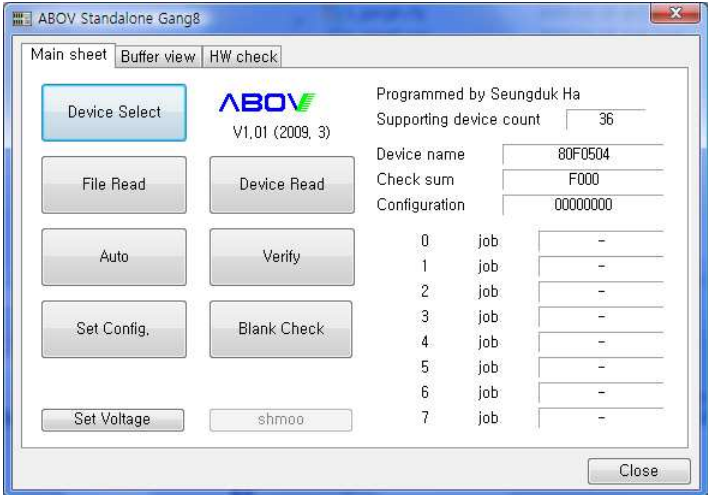
Ex) display of LCD panel (After programming)

```

40P5301          2
CS:F942  cfg:FFFFFFF
  OK   NG    --  --
    --  --    -- OK
    
```

III. PC application program (Main sheet)

1. Dialog sheet

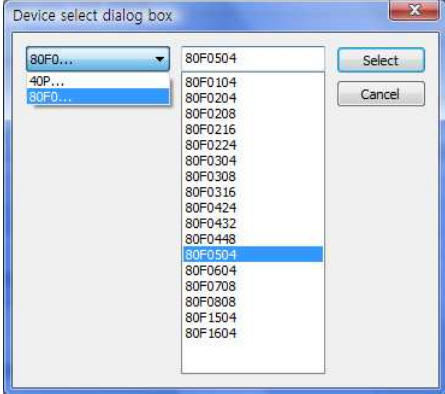


As mentioned before, Standalone-Gang8 is based on PC system. Standalone-Gang8 software is a kind of MS-Windows application program.

If you connect with monitor, you can see a dialog box as above. This is the Standalone-Gang8 control program.

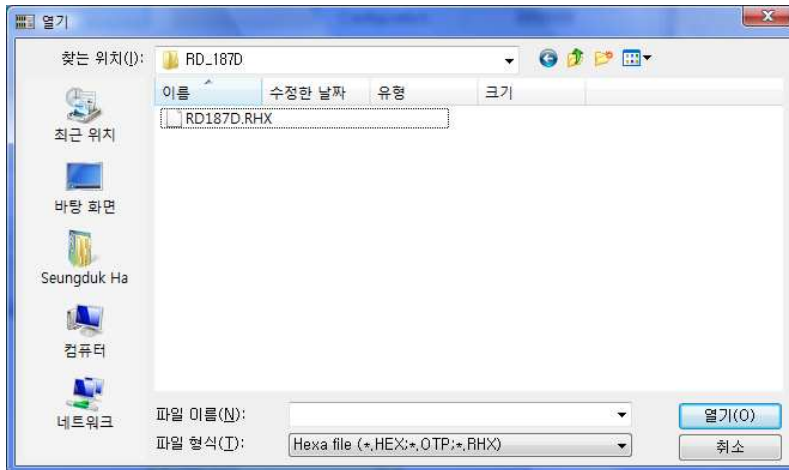
You can control Standalone-Gang8 hardware with this dialog box based program.

2. Device select

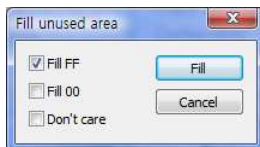


If you select device series, devices will be displayed. You can select device what you want, just click the device name and click "Select" button. If device is changed, PASS-counter will be cleared.

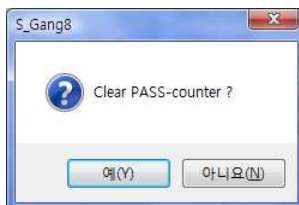
3. File read



Upload hexadecimal format file which will be used to program the target device.
Supporting hexadecimal format is Intel hexa and Motorola S format.



If you select a file, then it asks to fill unused area.
Check sum calculate your data code area include unused area too.
So you had better to fill 00 or FF.



It asks to you clear the PASS counter or not.

4. Device read

It reads code data and configuration from Standalone-Gang8's Master gang (G1).
If device is locked, it can not read device.
PASS counter will be cleared automatically.

5. Device programming

It program device code memory and configuration, and then it verify devices were programmed correctly or not.

Standalone-Gang8 enumerates passed device count and add it to PASS counter and display it.

6. Device verification

It compares device's code memory, configuration value to Standalone-Gang8's buffer.

In general, verify function checks only one time.

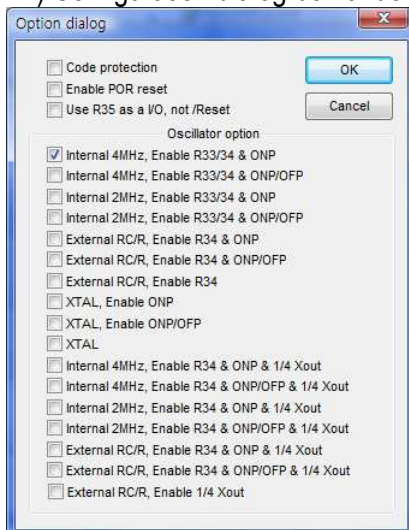
But, some device asks one more verify with different voltage level.

7. Device configuration

You can see or change device configuration here.

Each device series have different configuration, so you have to refer your device manual.

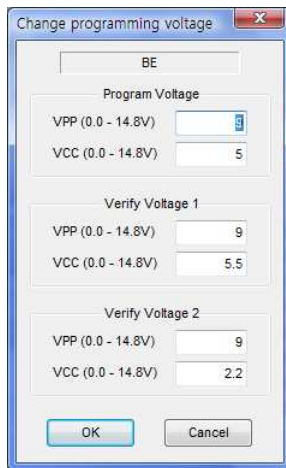
Ex) Configuration dialog box of device (MC80F0104)



8. Device blank check

It examines devices are blank or not.

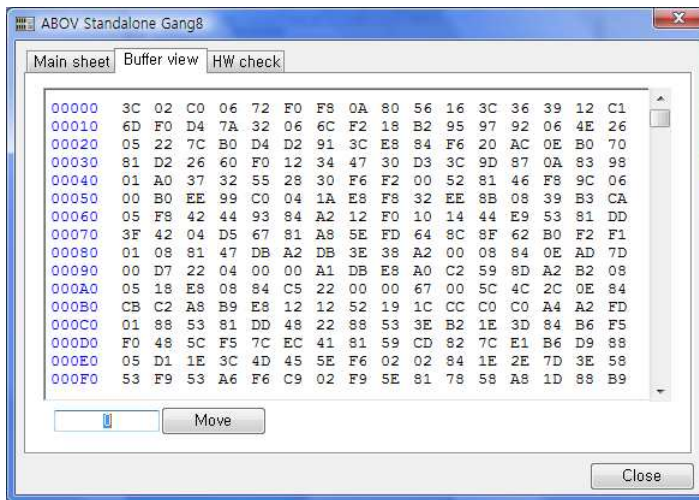
9. Set voltage



It shows programming voltage and verify voltage.
Do not change this value.

IV. PC application program (Buffer view sheet)

1. Dialog sheet



Buffer view sheet shows PC code buffer to user using hexadecimal value.

Data editing is prohibited to prevent user's mistake and data change during mass production time.

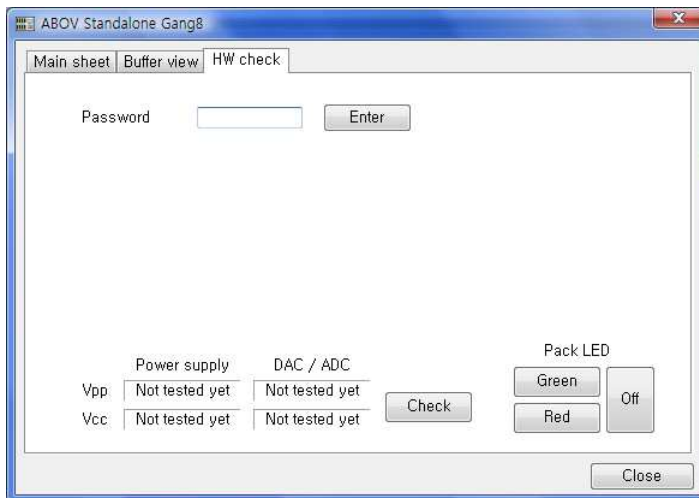
2. Move

It changes displayed area.

Input address and click "Move" button.

V. PC application program (HW check sheet)

1. Dialog sheet

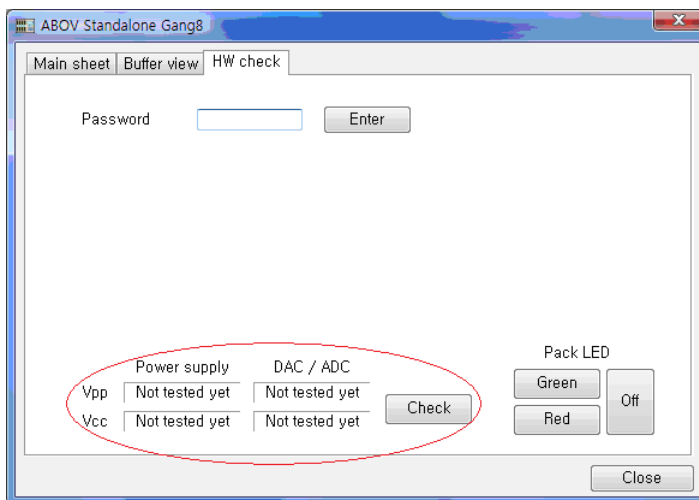


It offers simple hardware checking function to user.

2. Password

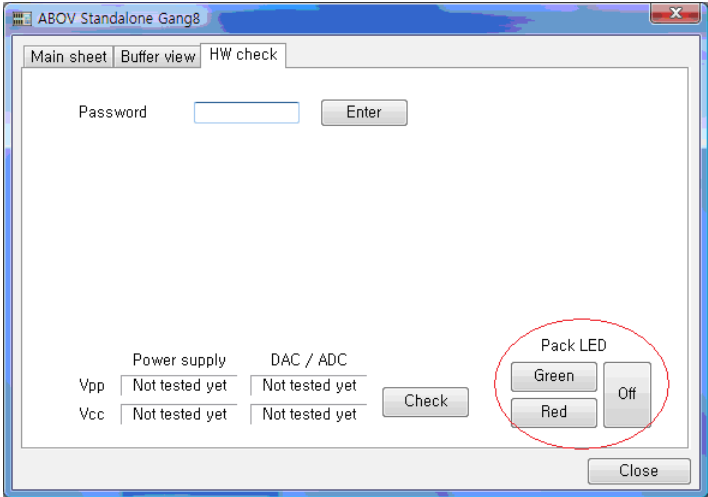
This is not for user.
It is used for hardware repair.

3. System power check



It checks Standalone-Gang8's power supply and DAC, ADC operation
If there was no problem, "PASS" will be displayed.
If "Fail" was displayed, hardware repairing is needed

4. Pack board LED check



It checks LED on the pack board.
If one or more LED was not worked, pack or base system repairing is needed.

VI. Error message

Device error message will be displayed LCD panel and monitor.

Monitor can display error type and its address, but LCD panel is too small to display it.

LCD panel displays only "OK", "NG", etc.

The other error message is as following.

Detect over current

If over current was detected, this message will be displayed.

The main cause of over current is device inserting mistake or power short.

Device may be damaged which was misplaced.

Ex) display of LCD panel

```
40P5301      2
CS:F942  cfg:FFFFFFFF
Error detected !
  Detect over current
```

Not PGM blank data

If user attempted blank data programming, this message will be displayed.

It prevent to produce blank chip after programming

Ex) display of LCD panel

```
40P5301      2
CS:F942  cfg:FFFFFFFF
Error detected !
  Not PGM blank data
```

Use : PACKNAME

If current attached pack type was not matched to target device, this message will be displayed.

Change the pack board to displayed pack board name.

Ex) display of LCD panel

```
40P5301      2
CS:F942  cfg:FFFFFFFF
Error detected !
  Use : Pack-80F0xxx
```