SONIX 8-BIT MCU OTP Easy Writer

User's Manual

General Release Specification

MANUAL REVISION HISTORY

Version	Date	Description
V0.1	Apr. 2004	Preliminary V0.1 first issue
V0.2	May. 2004	1. Modified SN8P1907 pin assignment. 2. Modified SN8P2704A Program table. 3. Add SN8P2705A program table and pin assignment.
V0.3	Jul. 2004	Add program table and pin assignment of SN8P2606 and SN8P2608.
V1.0	Nov. 2004	Add program table and pin assignment of SN8P2711, SN8P2714, SN8P2715, SN8P27142, SN8P27143 and SN8P26042
V1.1	May. 2005	Add program table and pin assignment of SN8P2612, SN8P2613, SN8P2624

HARDWARE REVISION HISTORY

Version	Date	Description
V1.0	Mar. 2004	V1.0 first issue

SOFTWARE REVISION HISTORY

Version	Date	Description
V1.00	Apr. 2004	Integrated with SN8IDE 1.99K
V1.01	May. 2004	Integrated with SN8IDE 1.99L 1. After load the driver of selection chip will show the driver version 2. Each time to read or write OTP will check VDD and VPP voltage first to protect VDD or VPP short if user put OTP device in wrong location. 3. Always generates log files. The log file will store all operation information except read function. The result of read function will be saved in *.BBB file. The naming rule of log file as following: a. MMDDHHmm.log MMDDHHmm means current date and time during generate log file. (MM: month, DD: day, HH: hour, mm: minute.) Restart easy writer program will generate new log file. b. Storage directory: The "writer_log" subdirectory of SN8IDE be installed. For example: C:\SONIX\Sn8IDE_1.99L\writer_log
V1.02	Jul. 2004	Change log filename from "MMDDHHmm.log" to "EZMMDDHHmm.log"
V2.00	Jul. 2004	Integrated with M2IDE for SN8ICE 2K (designed for SN8P2X series).

EZ WRITER DRIVER REVISION HISTORY

Version	Date	Description
SN8IDE V1.99U	Aug. 2005	Include new EZ WRITER DRIVER for SN8P1X MCU. **NOTE: The version older then V1.99U doesn't use again.**
M2IDE V1.05	Apr. 2005	Include new EZ WRITER DRIVER for SN8P2X MCU. **NOTE: The version older then V1.05 doesn't use again**

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1 SONiX 8-BIT MCU OTP EASY WRITER

ABOUT SONiX 8-BIT MCU OTP EAST WRITER

In order to provide R&D personnel with a simple writer, we devised a new writer: ”EZ WRITER”.

FUNCTION INTRODUCTION

- EZ_WRITER can programming all series of SONiX OTP MCU, which control by SONiX 8-bit MCU ICE. Different OTP MCU should cooperate with different transition board.
- Support WRITER transition board and ICE transition board.
- When used WRITER transition board, you can put OTP MCU on 48pins text tool.
- It need't to update the firmware or control IC in EZ Writer when add new type OTP MCU. When add new type MCU, it only need to change the programming software.
- SONiX 8-bit MCU ICE supply power to EZ Writer.
- Automatically check the VPP and VDD voltage.
- When used “Blank Check & Verify” function, it will show error position、OTP data and source data.
- VPP voltage will show in Information dialogue block at all times, and user can adjust VPP voltage anytime.
- Programming software build in compiler, and it can show error message.
- Programming speed depend on ICE’s system clock. EZ Writer initial Mode is 4MHz Crystal, and the ranges between 4M and 20MHz Crystal. We don’t advised using slow system clock, because it will waste a lot of times.
- When used “Read OTP” function, it will show the dada from OTP MCU.
  Note: After running “READ OTP” function, the data will store at “filename.bbb” file.

HARDWARE INTRODUCTION

- EZ_WRITER contains programming board and 60 PIN cable. Programming board contains TEXT TOOL、Writer transition socket and 20 PIN transition socket.

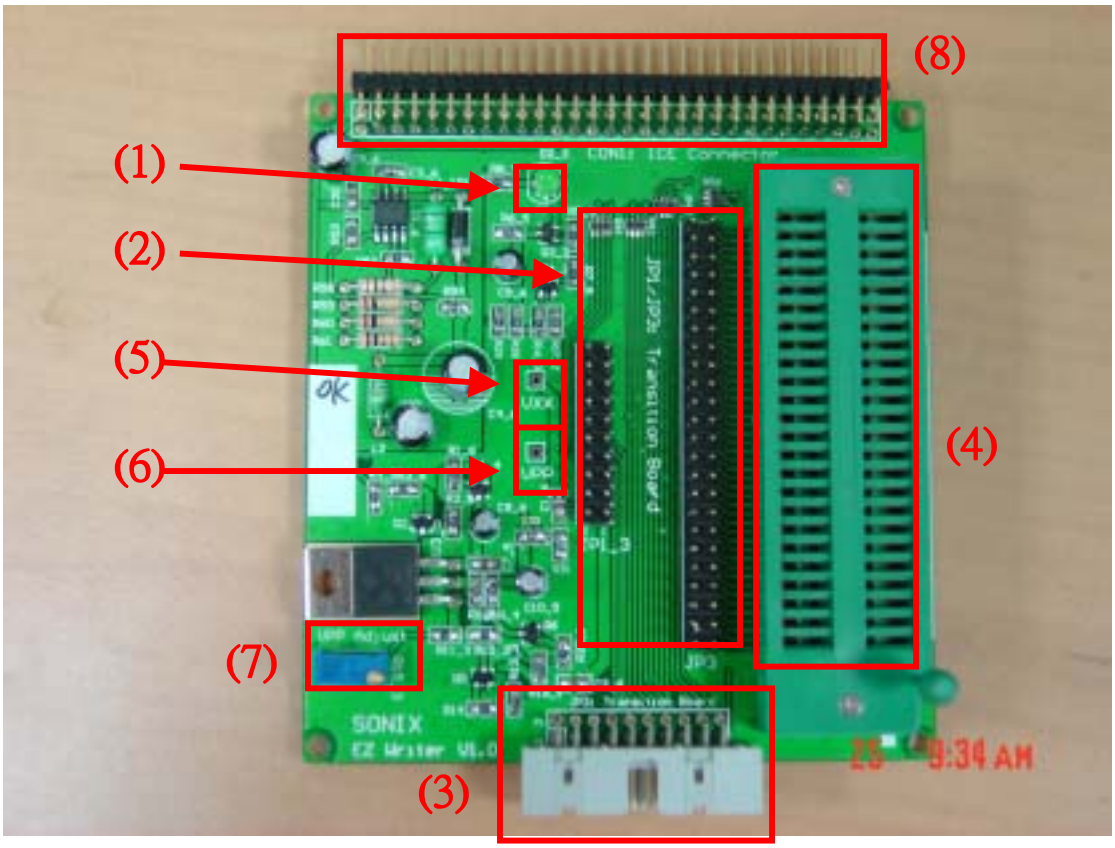


Figure 1

No.	Feature	Description	Remark
(1)	D2	Power indicator LED.	
(2)	JP1 & JP3	Writer Transition Socket 20 pin to 48 pin.	
(3)	JP2	20 PIN socket.	
(4)	TEXT TOOL	When using Writer transition board, put OTP on this Text Tool.	
(5)	VXX	VXX Voltage Measurement	The default value of VXX is 5V
(6)	VPP	VPP Voltage Measurement	The default value of VPP is 12.3V
(7)	VR1	Adjust VPP Voltage	
(8)	CON1	ICE Connector	

ACCESSORY INTRODUCTION

- (1)Connect with ICE : 60 pins cable.

Figure 2

- (2)Connect with Writer transition board or Writer transition board:20 pins cable.

Figure 3

- (3) Writer transition board: When programming, different MCU type should mapping to correct Writer transition board, and then put OTP MCU on EZ Writer 48pins text tool.
  NOTE: When IC PIN number greater then 48 PIN, Writer transition board connect with EZ Writer by 20 pins cable, and then put OTP MCU on Writer transition board socket.

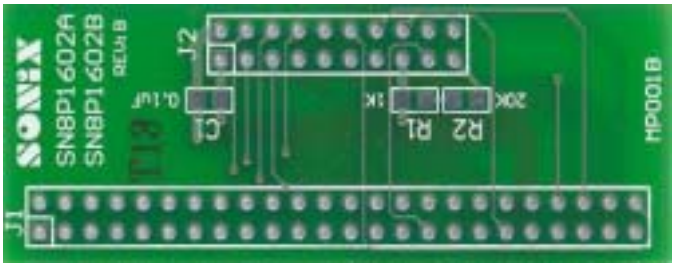


Figure 4-1 Writer transition board (IC PIN number smaller then 48 PIN)

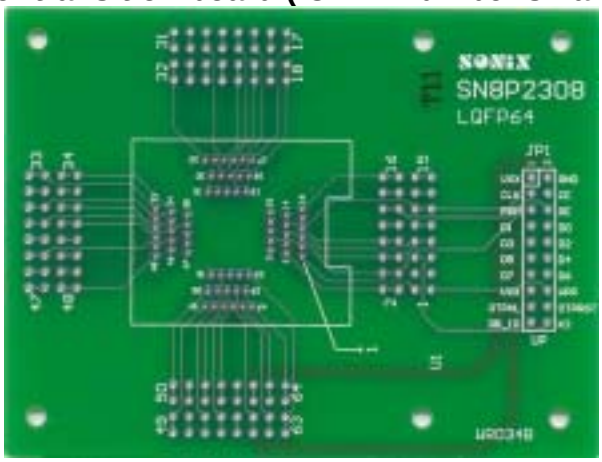


Figure 4-2 Writer transition board (IC PIN number greater then 48 PIN)

- (4) ICE transition board: When programming, different MCU type should mapping to correct ICE transition board. Step1:Connect ICE transition board and EZ Writer with 20 pins cable. Step2: Put OTP MCU on ICE transition board text tool.

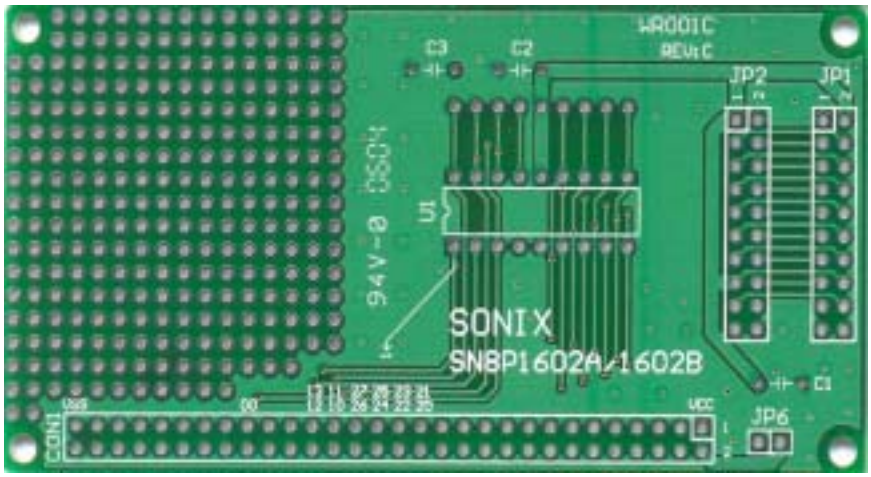


Figure 5

- **NOTE: You can choice Writer transition board or ICE transition board to programming MCU.**

■ (5) ICE transition board or Writer transition board (IC PIN number greater then 48 PIN) connect with EZ Writer

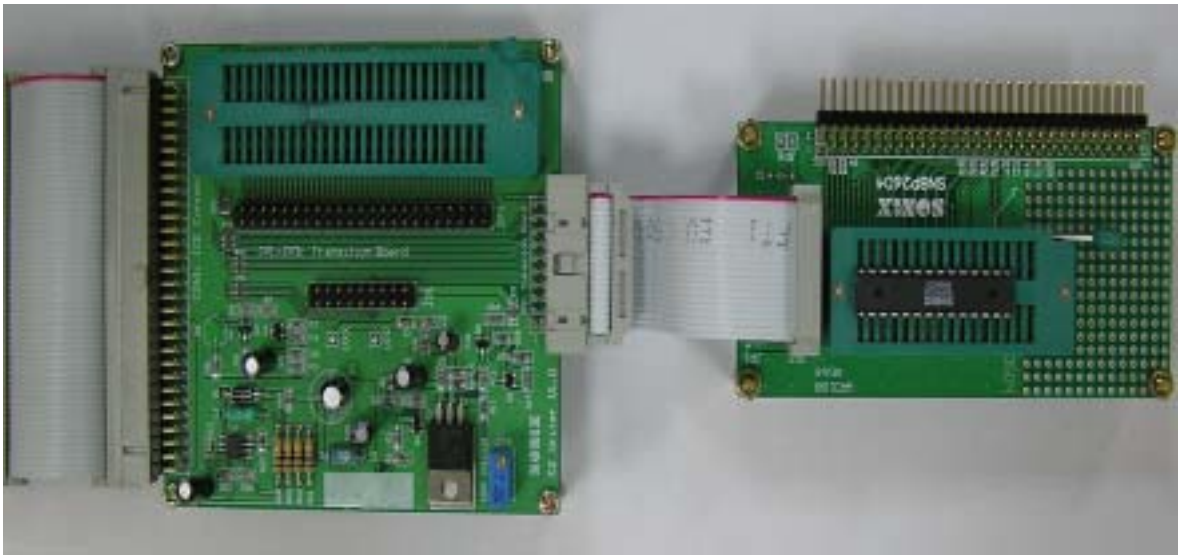


Figure 6

■ (6)Writer transition board (IC PIN number smaller then 48 PIN) connect with EZ Writer

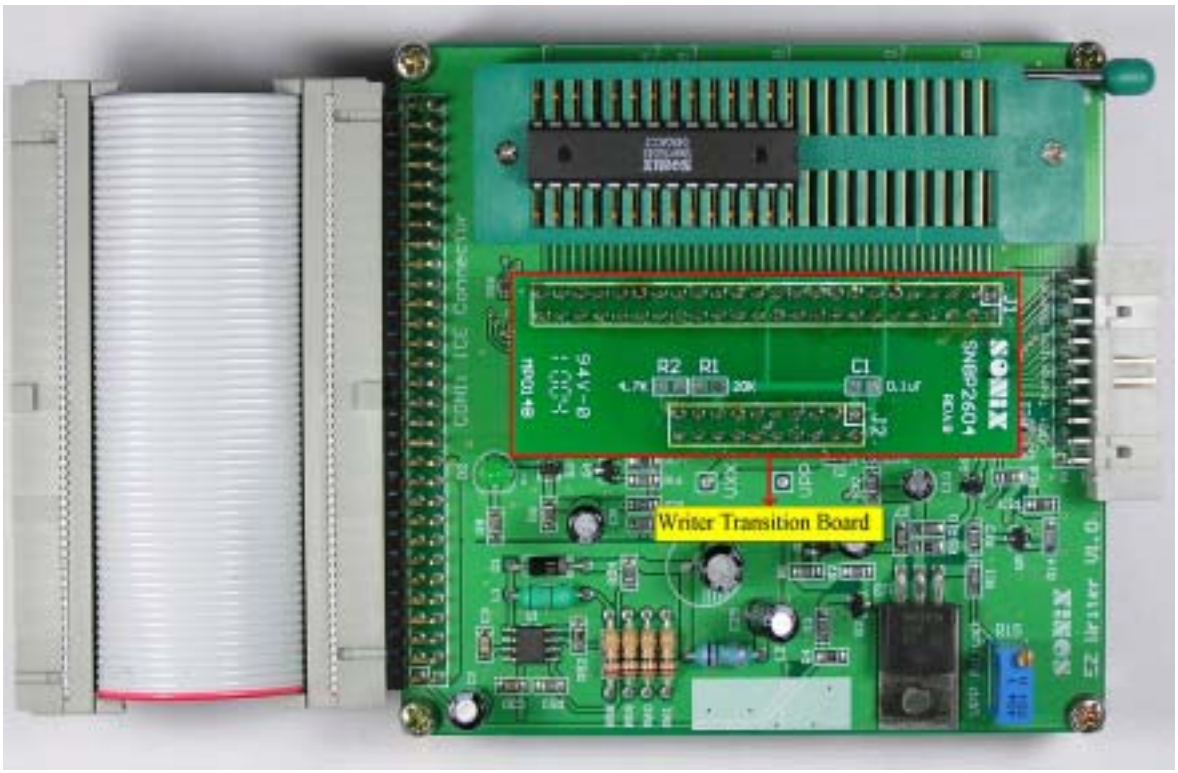


Figure 7

CONNECTION INTRODUCTION

- EZ Writer connect with SN8ICE 1K by way of 60 PIN cable and stitches.

Figure 8

EZ Writer can connect with SN8ICE 2K by way of 60 PIN cable.

Figure 9

NOTE: In SN8ICE 1K and SN8ICE 2K,"AVREFH" & "AVREFL" should connect with JUMPER.

NOTE: In SN8ICE 1K, "DIP SWITCHSW1" fixed OFF.

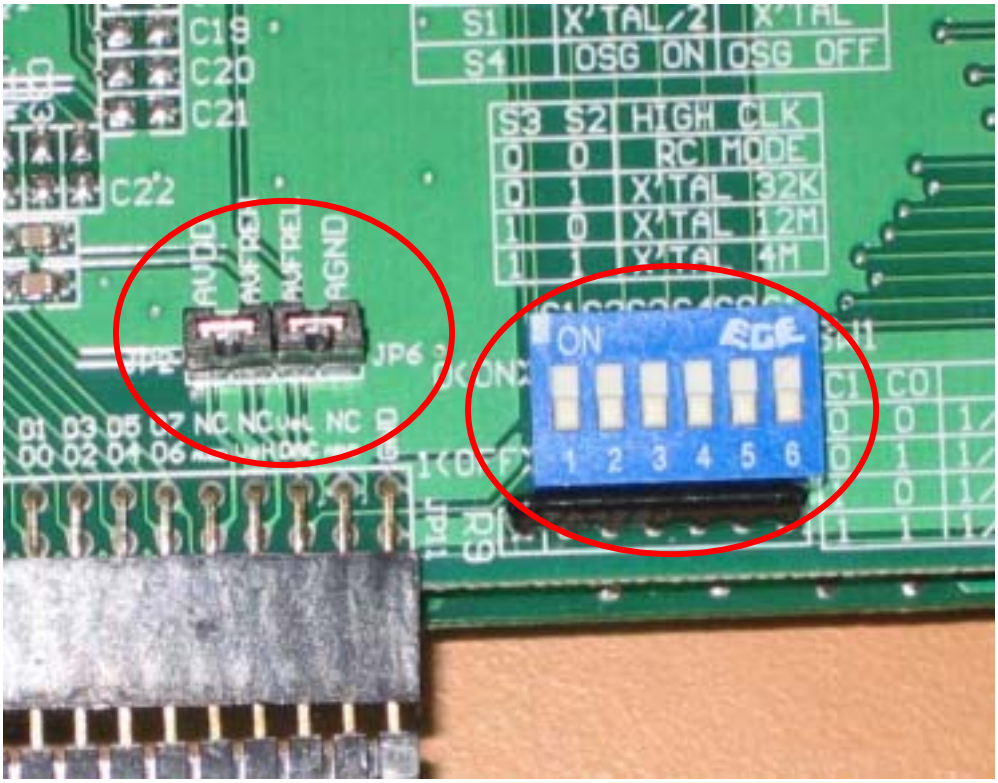


Figure 10

- SN8ICE 2K: In SN8ICE 2K , ,"AVREFH" & "AVREFL" & "INTERNAL 5V" should connect with JUMPER.

Figure 11

2 SOFTWARE AND HARDWARE INSTALL

SOFTWARE INSTALL

- EZ_WRITER programming software build in SN8 IDE V1.99K.

HARDWARE INSTALL

EZ Writer connect with SN8ICE 1K by way of 60 PIN cable and stitches, and then SN8ICE 1K supply power to EZ Writer as show below:

Figure 12

- Connect ICE transition board with EZ Writer.
- Put OTP MCU on 48pins text tool as show below:

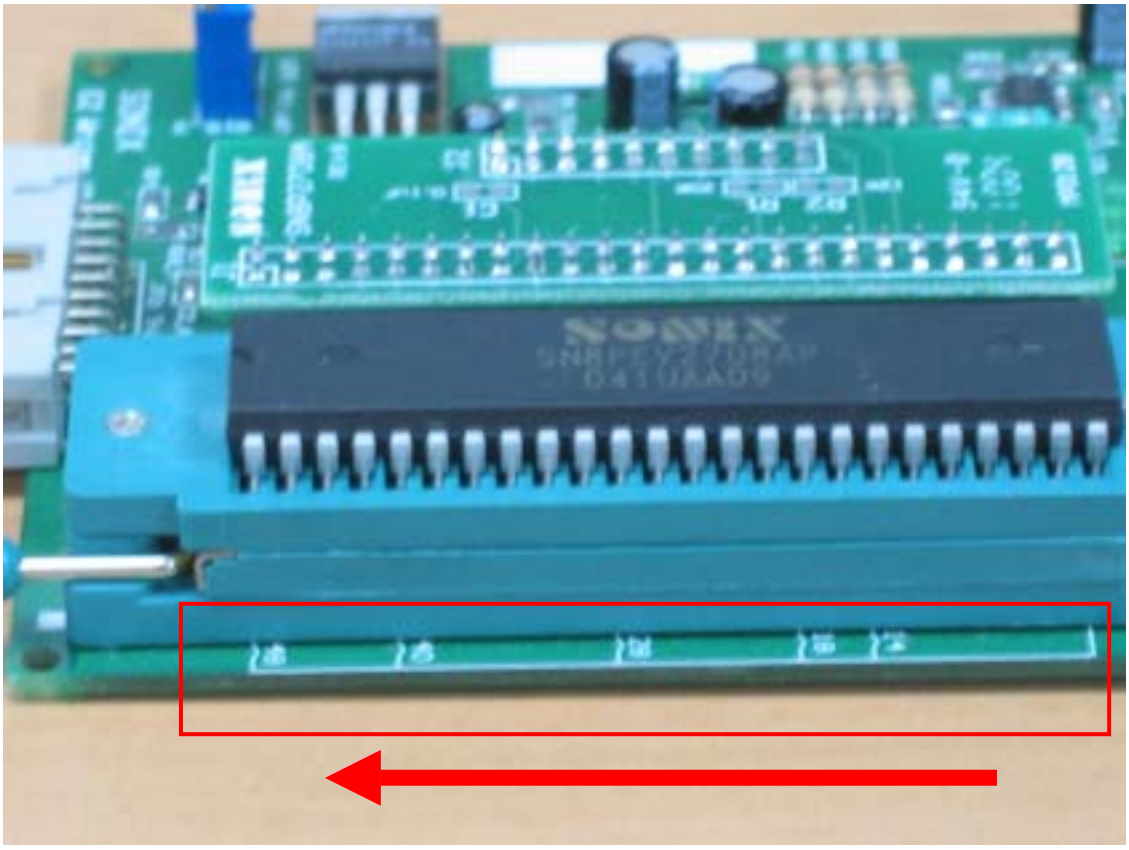


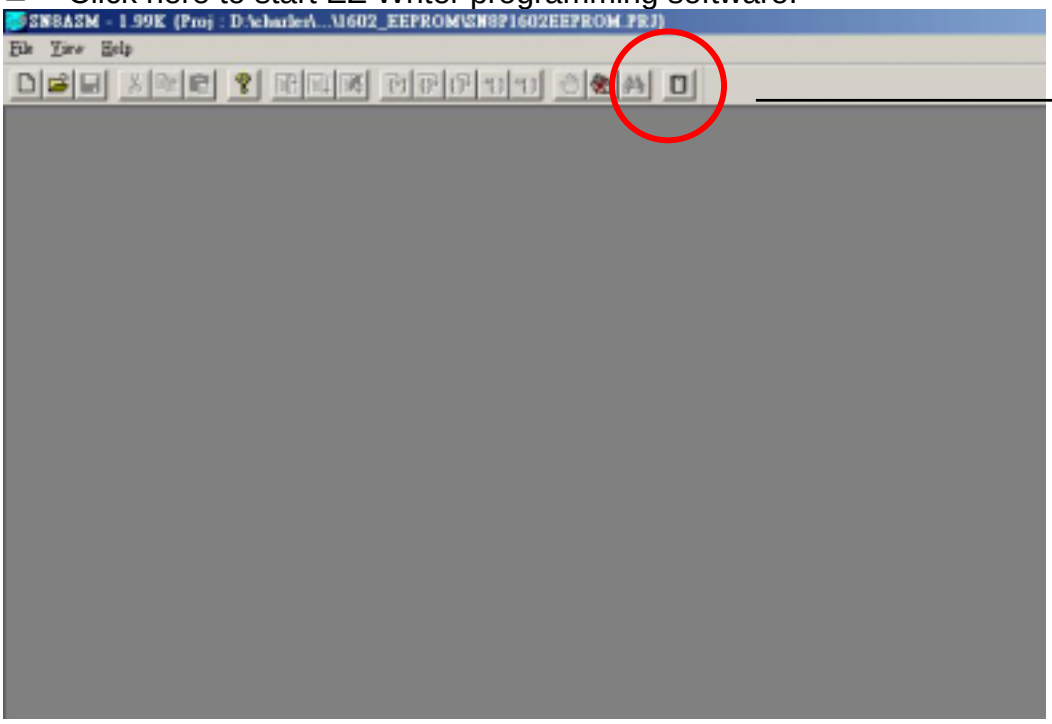
Figure 13

3 PROGRAMMING INSTRUCTION

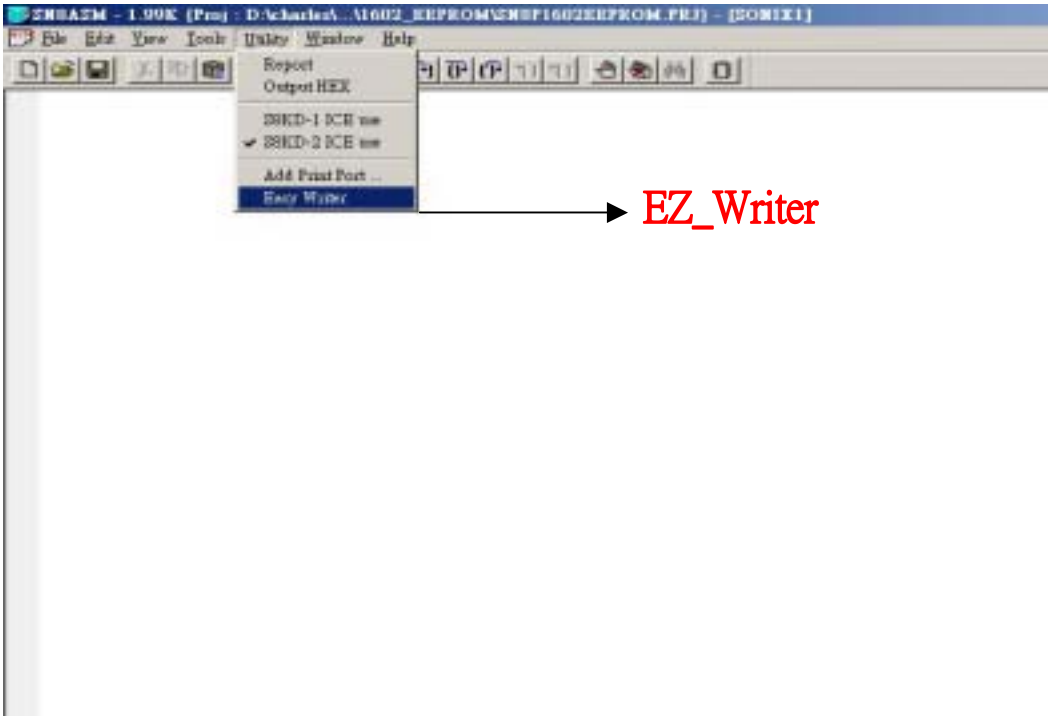
Programming 1K series OTP MCU should cooperate with 1K series compiler. Programming 2K series OTP MCU should cooperate with 2K series compiler.

START SOFTWARE

■ Click here to start EZ Writer programming software.

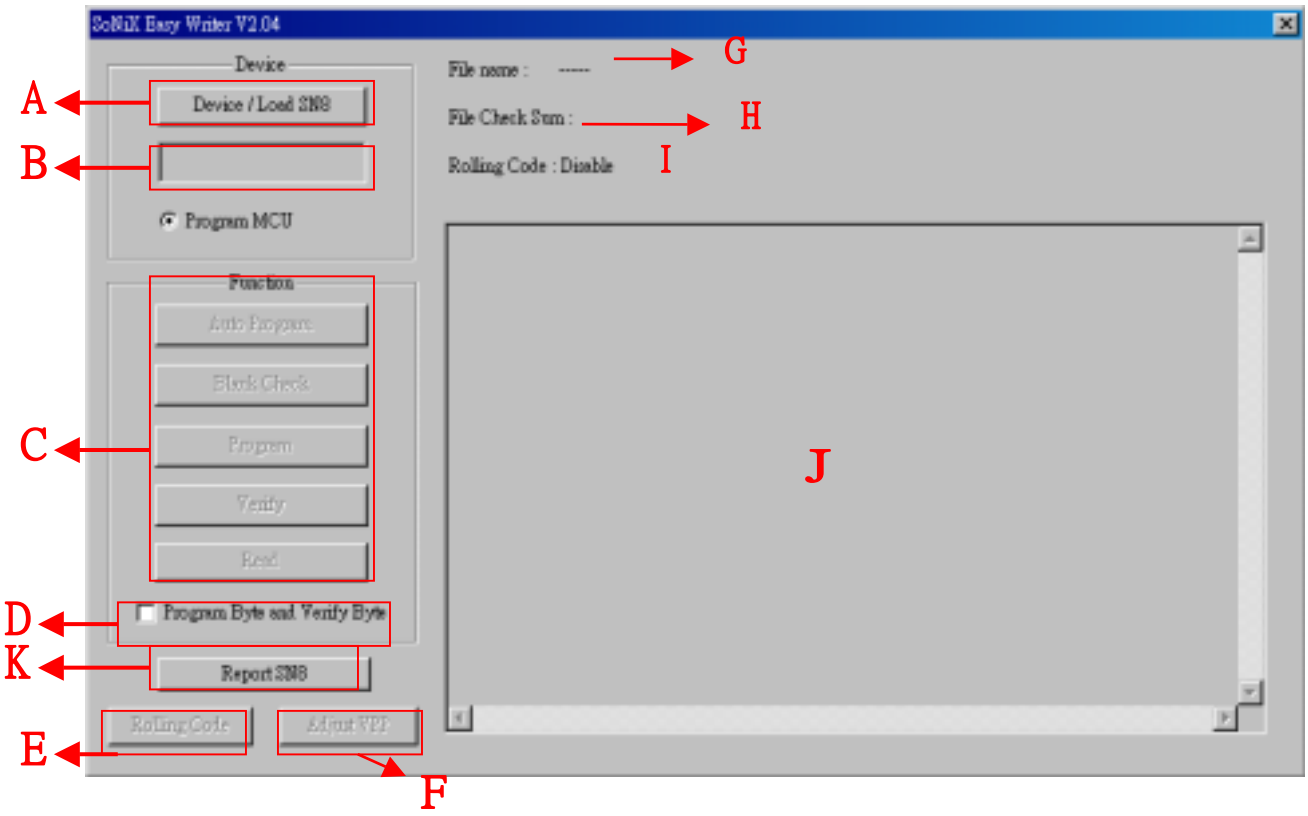


Another way, click ”Utility”、”EZ Writer” to start EZ Writer programming software.



OPERATION INSTRUCTION

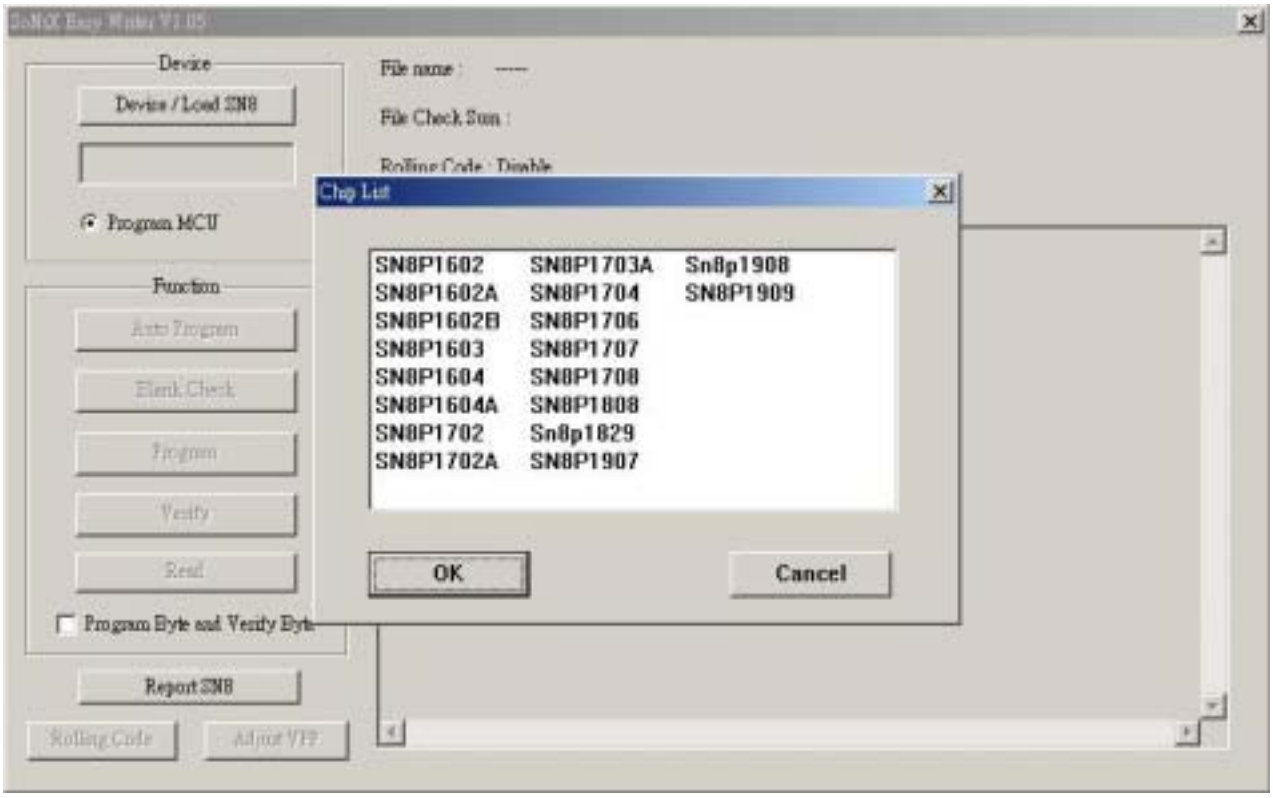
- EZ Writer programming software
-



A	Choice MCU type and open (*.SN8) file.
B	Show DEVICE name.
C	Choice Function.
D	Choice Program Byte and Verify Byte.
E	Rolling Code setting.
F	VPP adjust mode.
G	Show (*.SN8) file route.
H	Show (*.SN8) file Checksum, and show Security Enable/Disable state.
I	Show VPP voltage.
J	Information dialogue block.
K	Report SN8 message.

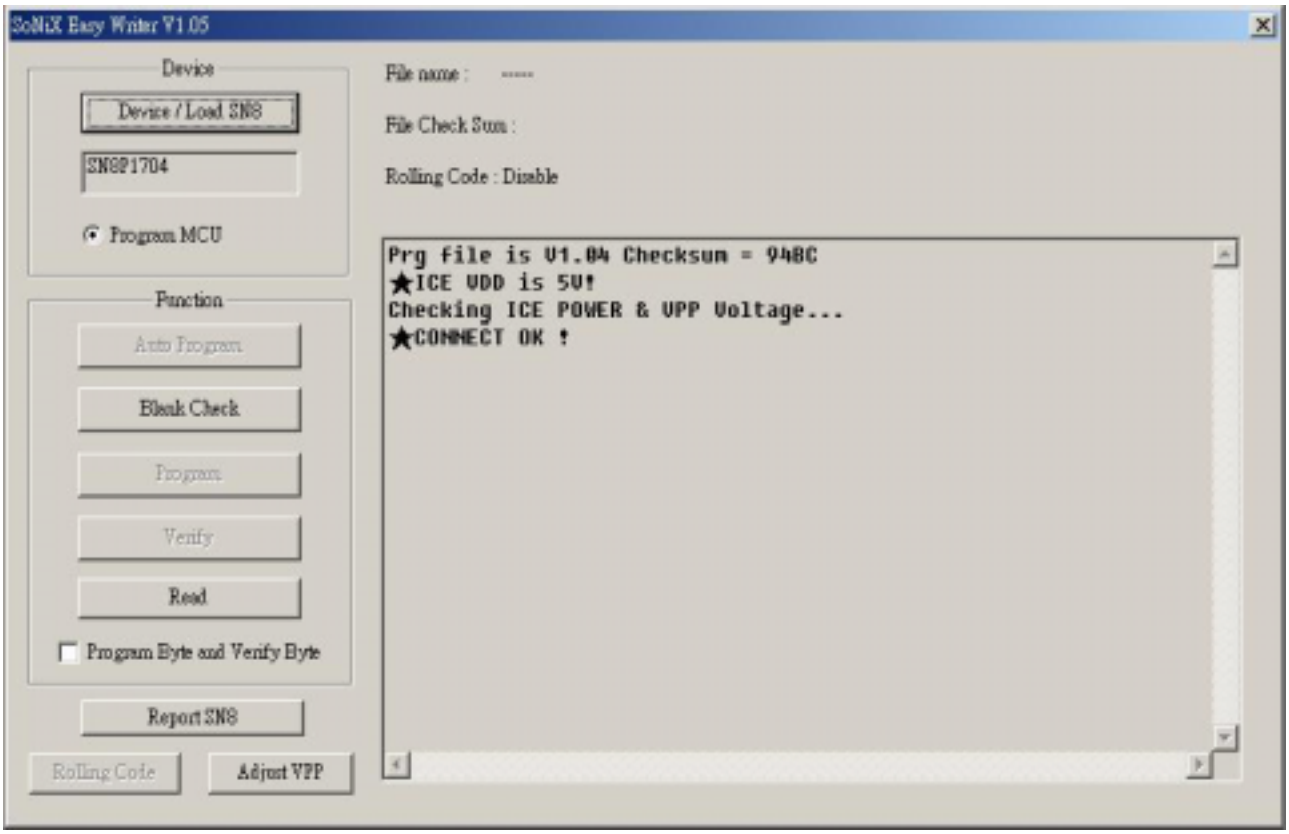
PROGRAMMING INSTRUCTION

Click ” Device/Load SN8“ button can choice Device and SN8 File as show below:

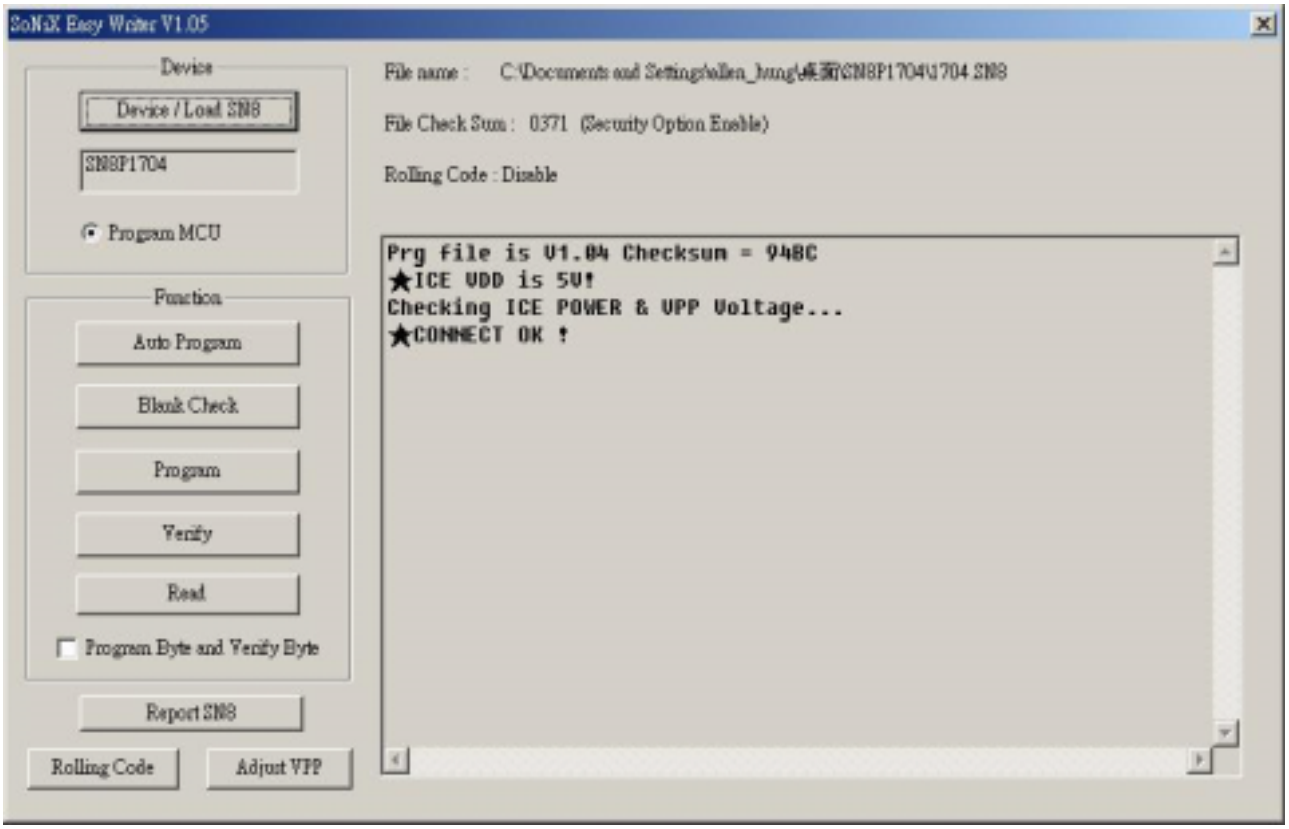


■ After choice Device, you can cancel SN8 file as show below:

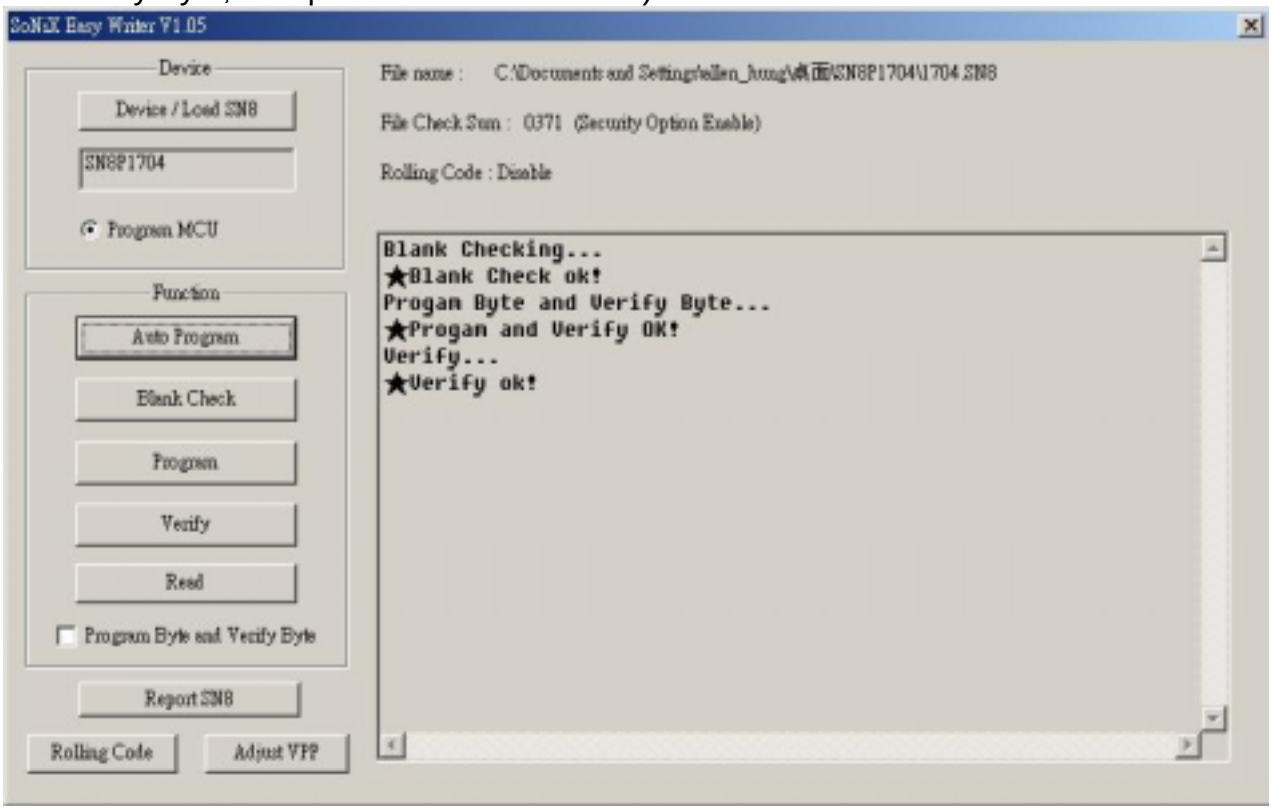
- If you don't open SN8 file, then Function block will only show "Blank Check" and "Read" button. Otherwise, it will show all function button. It will check ICE power、VPP and VDD voltage, whether open SN8 file or not.
- Without load SN8file:



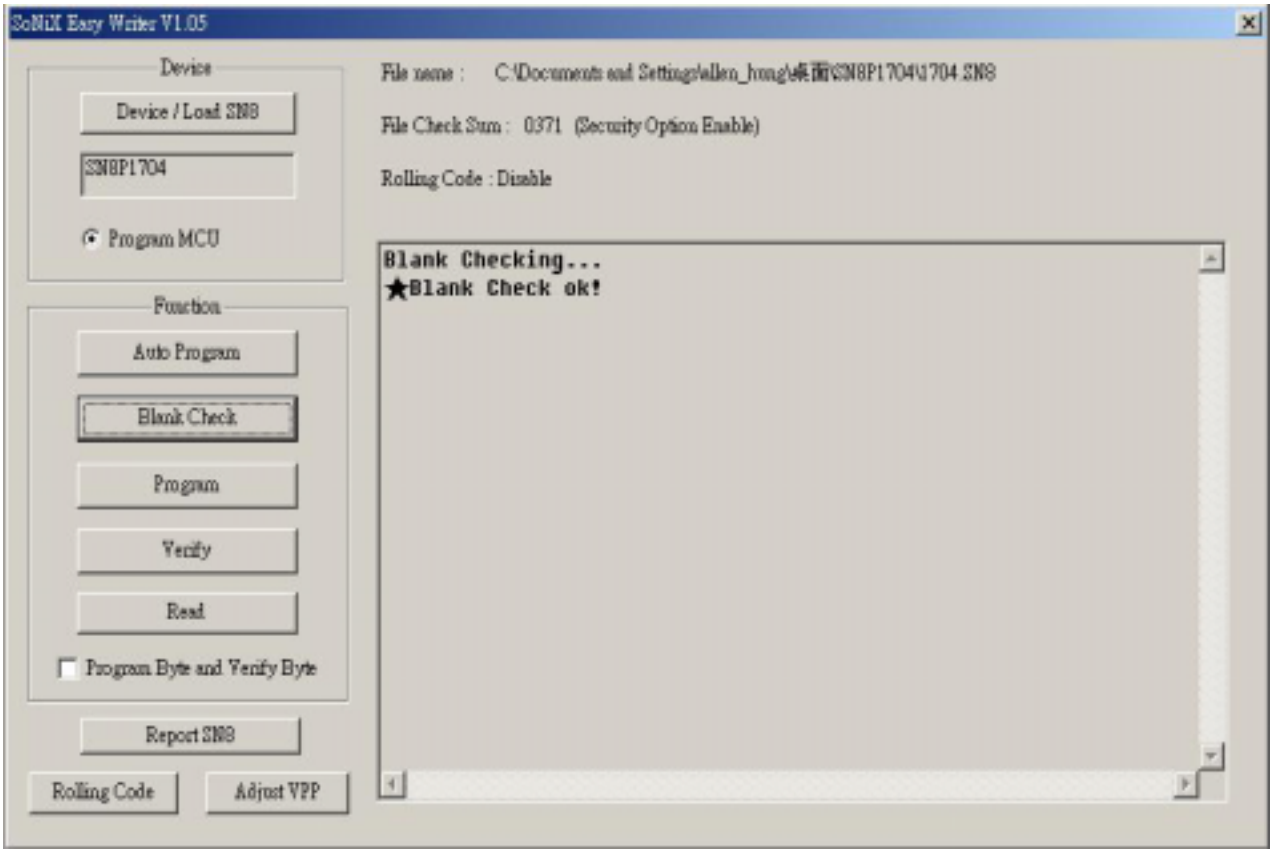
- LOAD SN8 file:



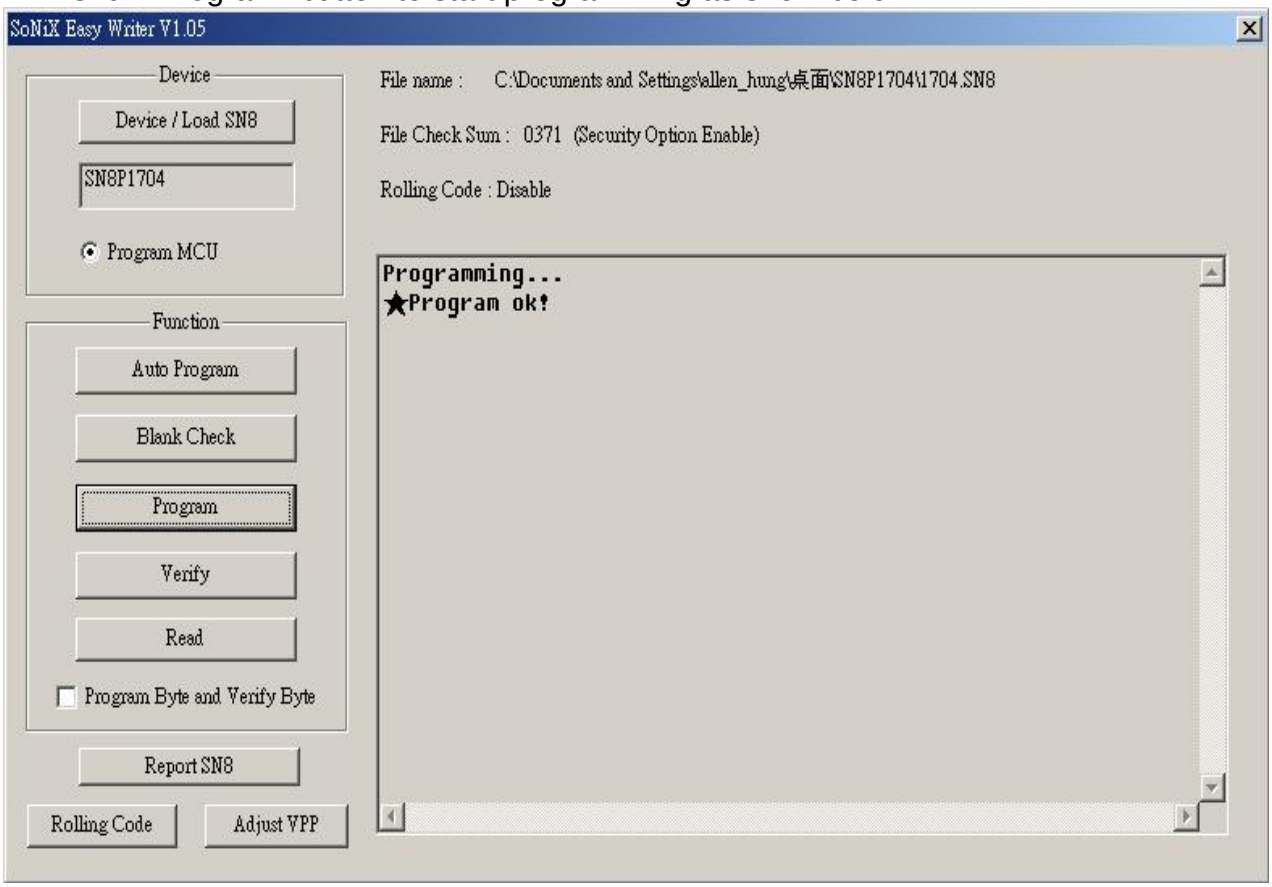
- "ICE VDD IS 5V! CONNECT OK!" message show in information dialogue block means that power in ICE and Writer is correct.
- Click "Auto Program" button as show below:(AUTO Program function is Program Byte and Verify Byte, except 2K series OTP MCU.)



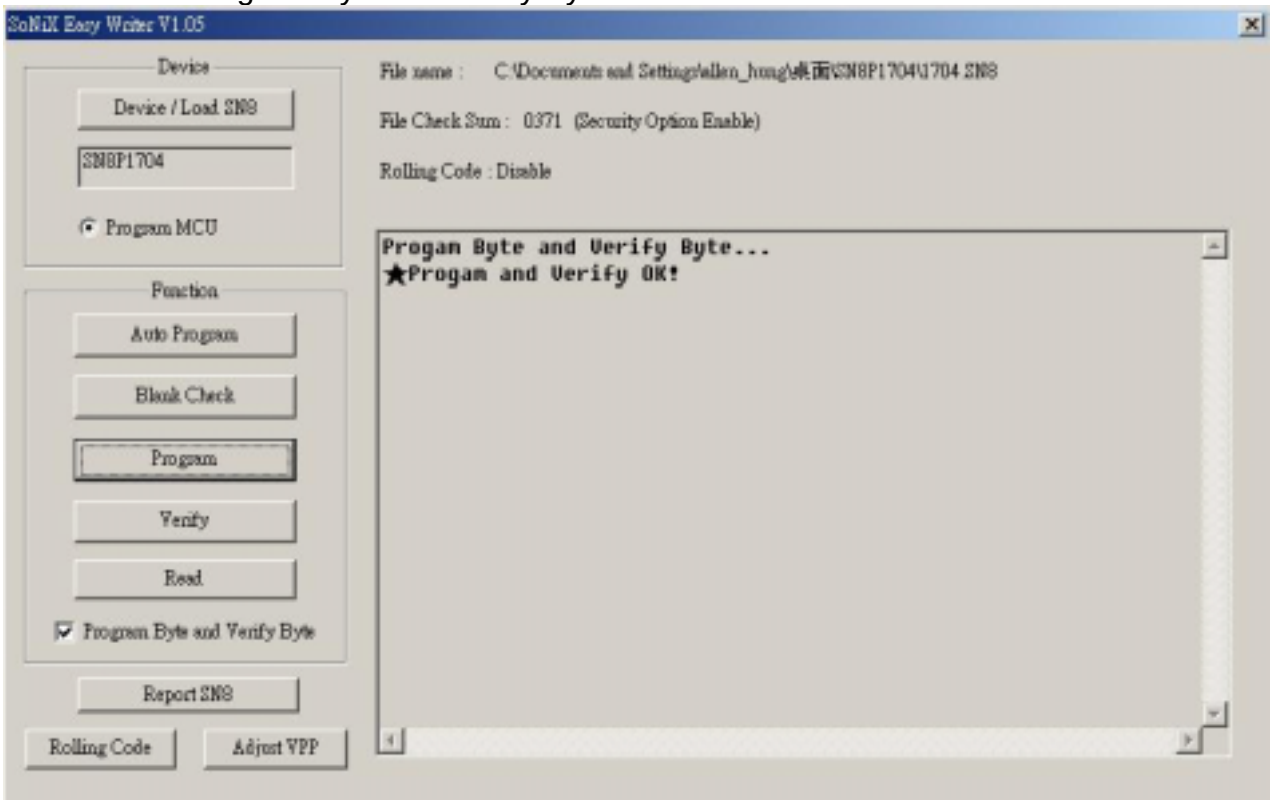
- Click "Blank Check" button as show below:



- If OTP doesn't BLANK, it will show "Blank Check Fail!".
- Click "Program" button to start programming as show below:

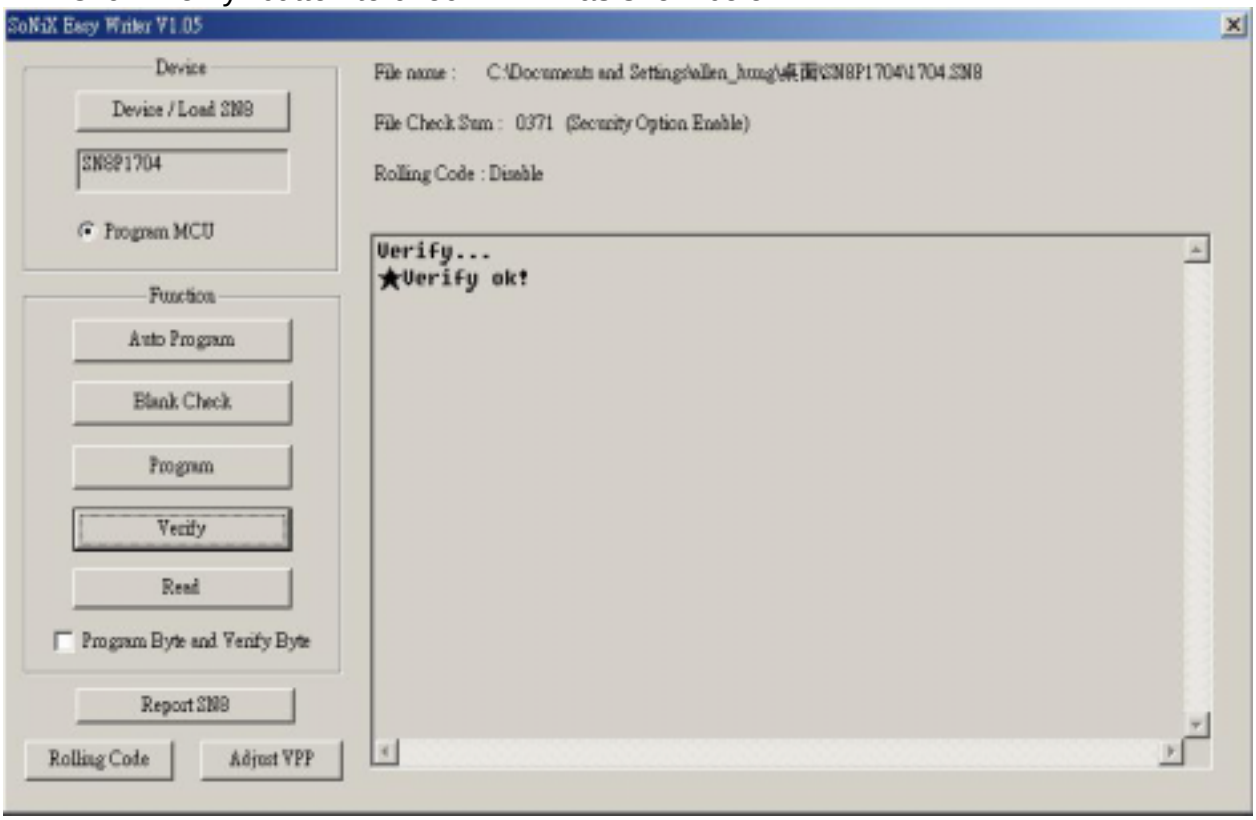


- Choice "Program Byte and Verify Byte" function as show below:

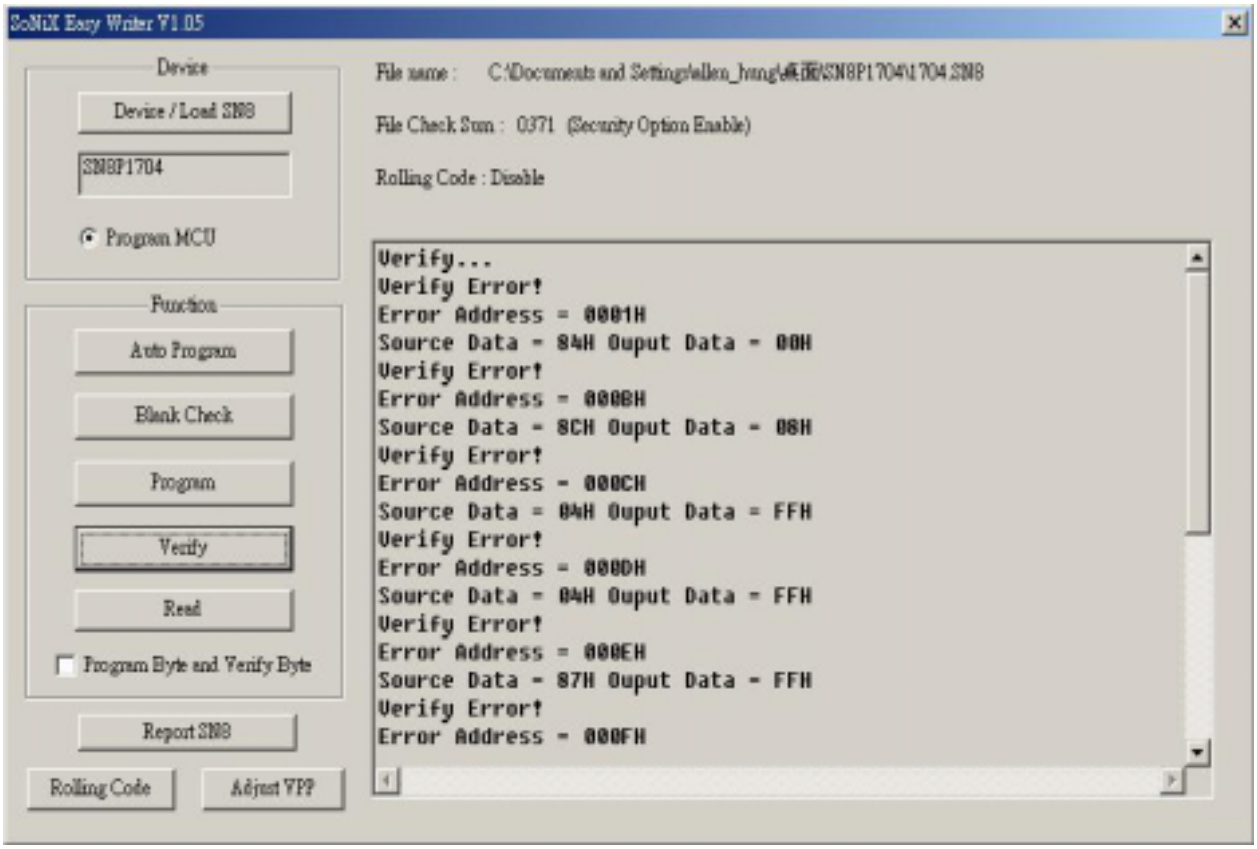


- Under "Program Byte and Verify Byte" function, if dada occur error, then error message will show in information dialogue block instantly.

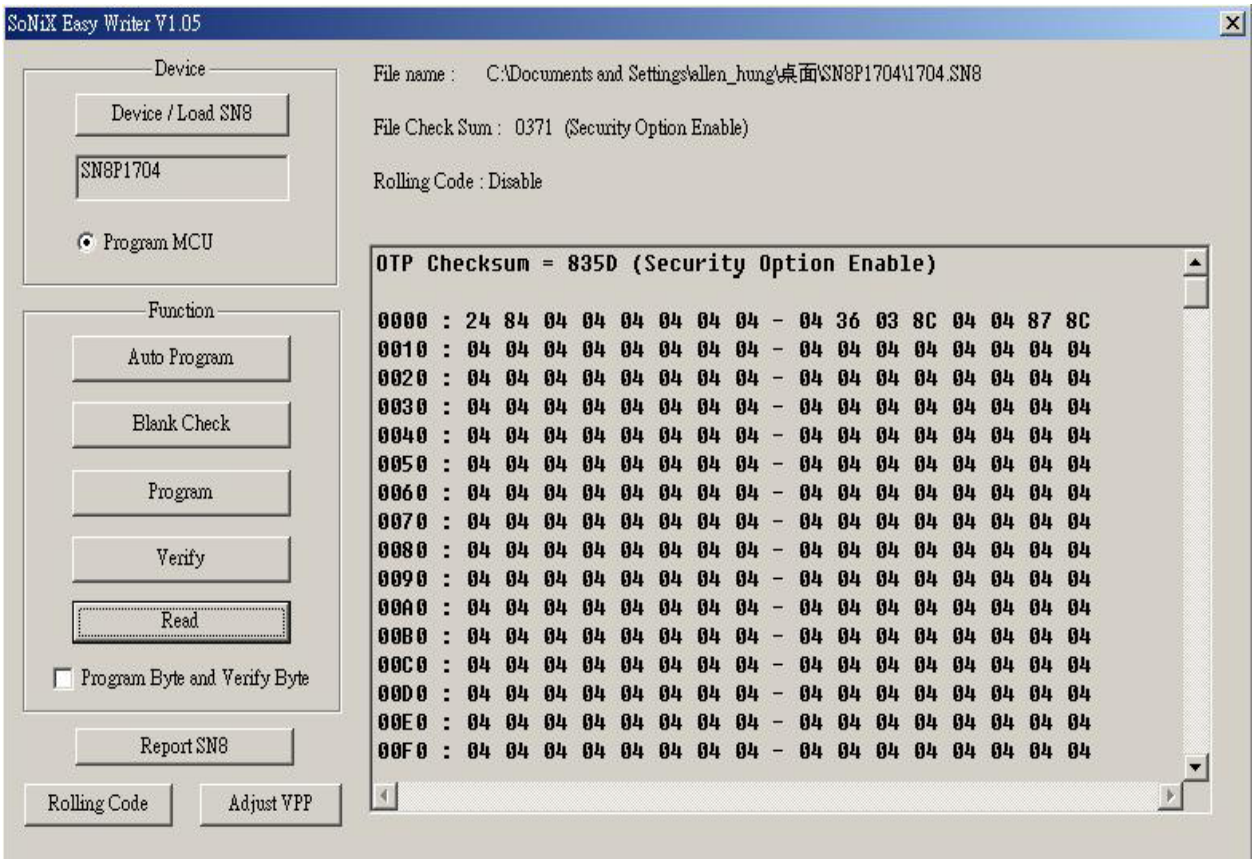
- Click ”Verify” button to check DATA as show below:



- If there are any different between read data and source data, it will show ”Verify Error!” as show below:



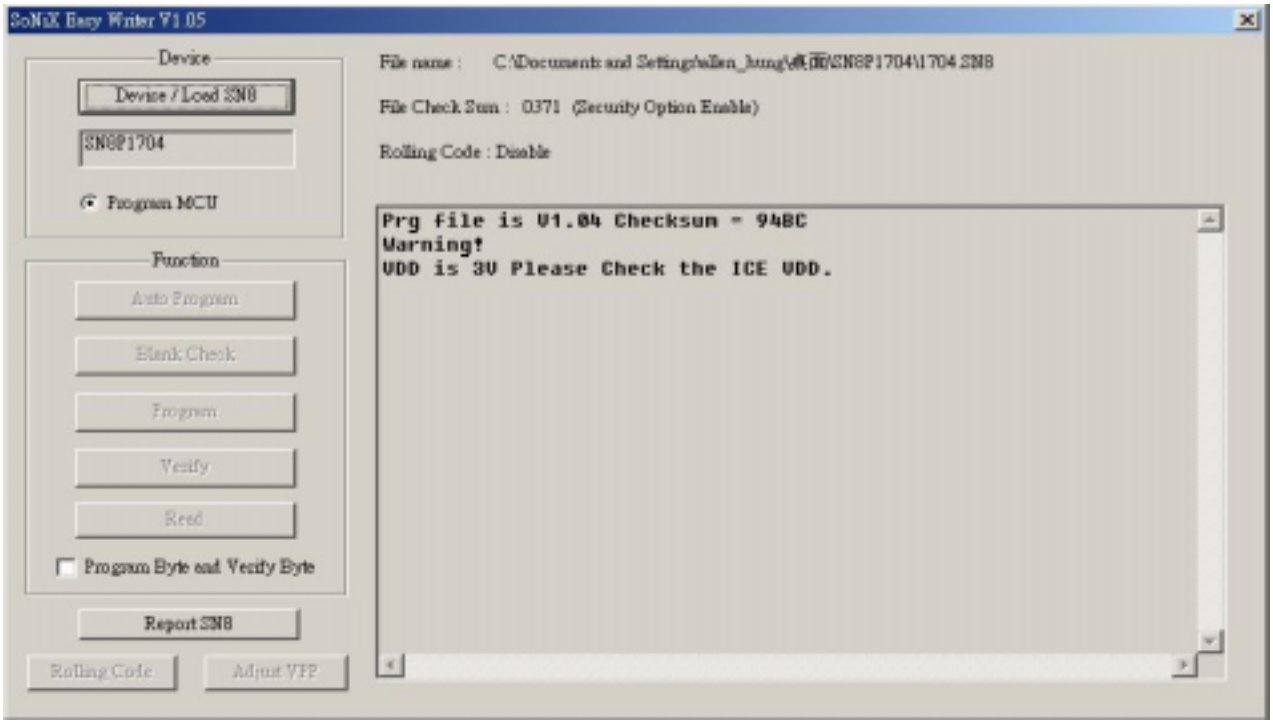
- Click ”READ” button will read OTP data as show below:



- Information dialogue block can show OTP Checksum、Security Option Enable\disable state and OTP DATA.

4 FAULT SOLVE

- **"Warning!! VDD is 3V,Please Check the ICE VDD"** means ICE VDD voltage error, please check JP2 jumper to 5V. In SN8ICE 2K will not check VDD voltage, so that user should make sure VDD connect with 5V.



- SN8ICE 1K JP2 JUMPER

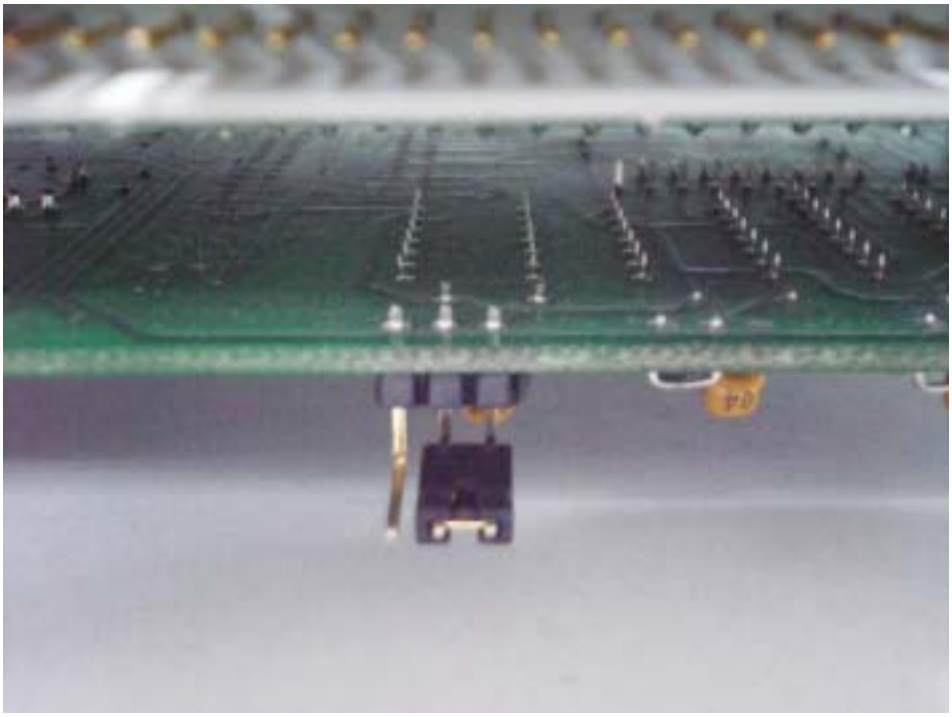
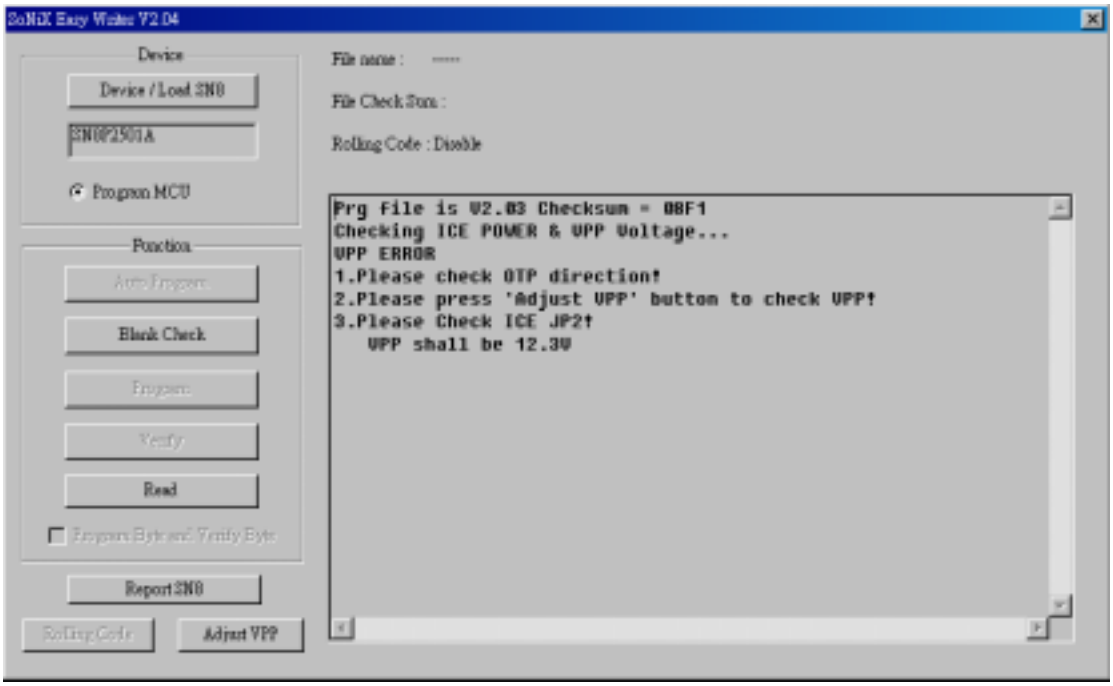


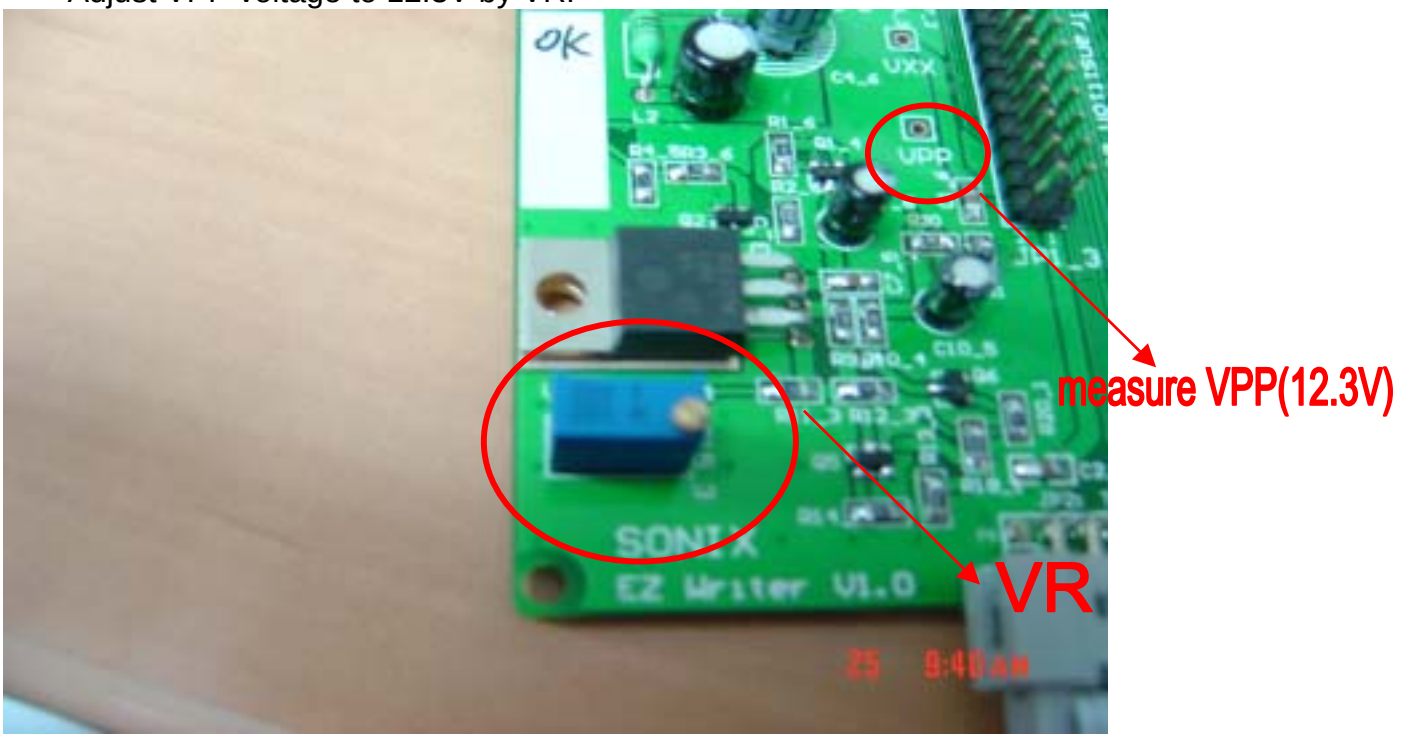
Figure 12

- "**ERROR!! Please check OTP direction!**" means OTP direction error.
- When **"VDD ERROR"** showing, please check ICE POWER to 5V、OTP direction and OTP type.
- When **"VPP ERROR"** showing, please check VPP to 12.3V、OTP direction and OTP type.

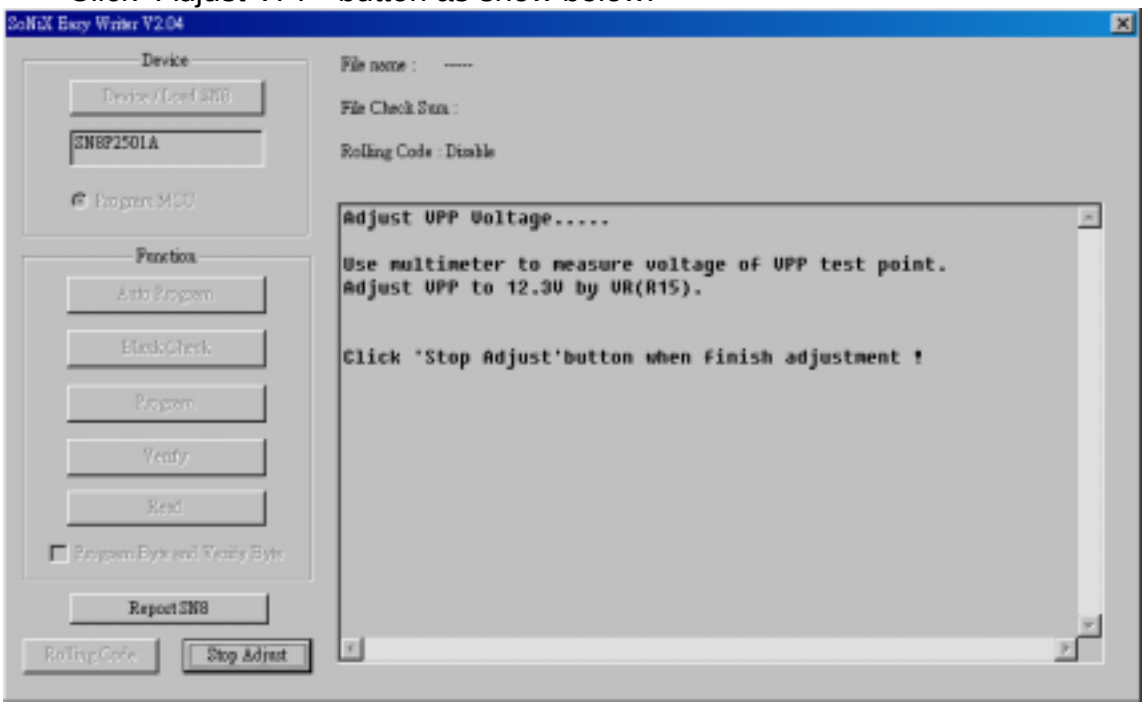


- When "**VPP ERROR"** showing, please adjust VPP voltage. Click "Adjust VPP" button into adjusting VPP MODE. Adjust VPP voltage to 12.3V by VR. VPP voltage will show in information dialogue block. Another way, you can used an electric meter to measure VPP point as show below:

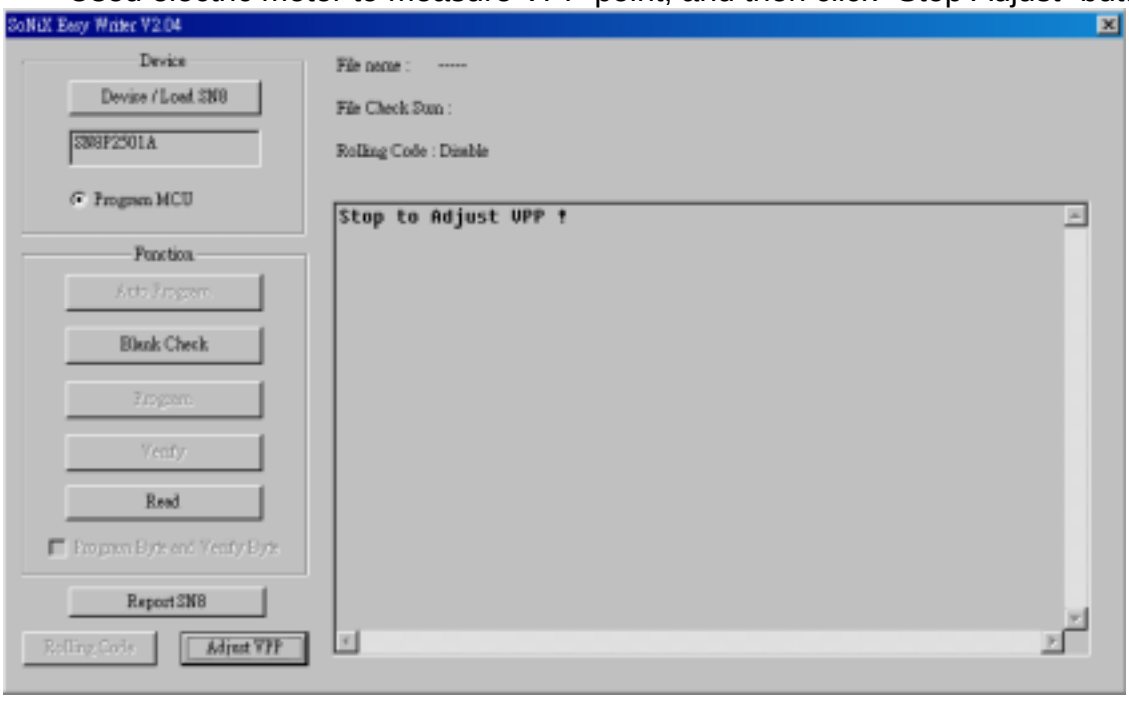
- Adjust VPP voltage to 12.3V by VR.



- Click ”Adjust VPP” button as show below:



- Used electric meter to measure VPP point, and then click “Stop Adjust” button as show below:



- If ICE doesn’t connect with power, it will show message as show below:

- If **“Over source code” message showing, it means** ICE had HOLD. Please reset ICE and reload SN8 file.

5 APPENDIX

APPENDIX A MESSAGE TABLE

item	Error message	Message instruction
1	**Blank Checking…**	Check OTP blank.
2	**Blank Check ok!!**	OTP is blank.
3	**Blank Check Fail!!** Address = xxxxH Output Data = xxxxH	OTP doesn't blank.
4	**Checking ICE Power & VPP Voltage…**	CHECK VDD and VPP voltage.
5	**CONNECT OK!!!**	CHECK VDD and VPP are correct.
6	**ICE VDD is 5V!!**	ICE's POWER is correct.
7	**OTP Checksum = xxxx**	Without Security OTP Checksum.
8	**OTP Checksum = xxxx (Security Option Enable)**	With Security OTP Checksum.
9	**Please Adjust VPP Voltge….**	Please Adjust VPP Voltge.
10	**Programming….**	Programming.
11	**Program ok!!**	Programming success.
12	**Program Fail!!**	Programming fail.
13	**Program Byte and Verify Byte…**	Program Byte and Verify Byte.
14	**Program Byte and Verify Byte ok!!**	Program Byte and Verify Byte success.
15	**Program Byte and Verify Byte Fail!!**	Program Byte and Verify Byte fail.
16	**Verify….**	Check OTP data and source data.
17	**Verify ok!!**	OTP data and source data are the same.
18	**Verify Fail!!**	There are different between OTP data and source data.
19	**VDD ERROR!!** 1.Please Check ICE Power!! 2.Please Check OTP direction.	Check ICE power、OTP direction and transition board type.
20	**VPP ERRPR!!** 1.Please Check OTP direction. 2.Please press "Adjust VPP" button to check VPP!! VPP shall be 12.3V	heck OTP direction or click "Adjust VPP" button to adjust VPP voltage.
21	**Stop to adjust VPP !**	Stop adjust VPP voltage.
22	**Warning!! VDD is 3V.Pleaes check the ICE VDD.**	Check ICE's power to 5V.

APPENDIX B PROGRAMMING PIN MAPPING

Writer programming pin mapping

VSS	2	1	VDD
CE	4	3	CLK/PGCLK
OE/ShiftDat	6	5	PGM/OTPCLK
D0	8	7	D1
D2	10	9	D3
D4	12	11	D5
D6	14	13	D7
VPP	16	15	VDD
RST	18	17	HLS
ALSB/PDB	20	19	-

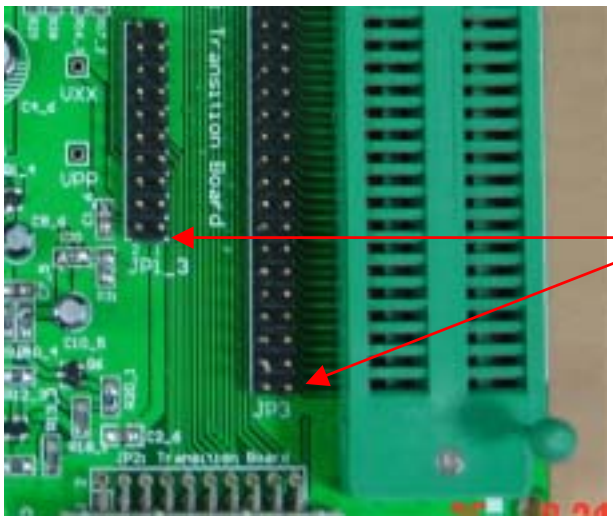
JP1 of writer transition board
JP2 of ICE transition board

JP3 PIN mapping to OTP PIN

DIP1	1	48	DIP48
DIP2	2	47	DIP47
DIP3	3	46	DIP46
DIP4	4	45	DIP45
DIP5	5	44	DIP44
DIP6	6	43	DIP43
DIP7	7	42	DIP42
DIP8	8	41	DIP41
DIP9	9	40	DIP40
DIP10	10	39	DIP39
DIP11	11	38	DIP38
DIP12	12	37	DIP38
DIP13	13	36	DIP36
DIP14	14	35	DIP35
DIP15	15	34	DIP34
DIP16	16	33	DIP33
DIP17	17	32	DIP32
DIP18	18	31	DIP31
DIP19	19	30	DIP30
DIP20	20	29	DIP29
DIP21	21	28	DIP28
DIP22	22	27	DIP27
DIP23	23	26	DIP26
DIP24	24	25	DIP25

JP3 of writer transition board

- **JP2: connect ICE transition board with 20 pins cable. If you want to make ICE transition board by your self, please refer to MCU programming pin mapping table.**
- **JP1/JP3: Used TEXT TOOL to programming IC, make sure connect correct type writer transition board to JP1/JP3 socket, If you want to make writer transition board by your self, please refer to MCU programming pin mapping table, and OTP pin1 should mapping to JP3 pin1, OTP pin2 should mapping to JP3 pin2.**
- **NOTE: If you want to make writer transition board by your self, JP1 and JP3 pin 1 as show below(right side) :**



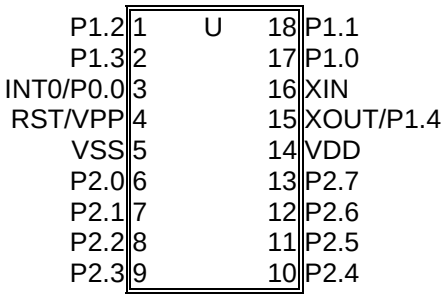
SN8P1600 Series

SN8P1600 Programming Pin Mapping

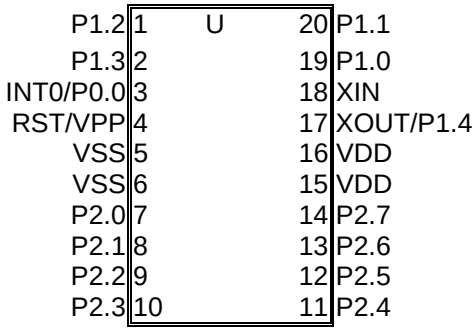
Programming Information of SN8P1600 Series							
Chip Name		SN8P1602 SN8P1603 SN8P1602A		SN8P1602B		SN8P1604 SN8P1604A	
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment					
Number	Pin	Number	Pin	Number	Pin	Number	Pin
1	VDD	14	VDD	14	VDD	2	VDD
2	GND	5	VSS	5	VSS	4	VSS
3	CLK	16	XIN	16	XIN	27	XIN
4	CE	3	P0.0	3	P0.0	5	P0.0
5	PGM	18	P1.1	18	P1.1	11	P1.1
6	OE	17	P1.0	17	P1.0	10	P1.0
7	D1	7	P2.1	7	P2.1	19	P2.1
8	D0	6	P2.0	6	P2.0	18	P2.0
9	D3	9	P2.3	9	P2.3	21	P2.3
10	D2	8	P2.2	8	P2.2	20	P2.2
11	D5	11	P2.5	11	P2.5	23	P2.5
12	D4	10	P2.4	10	P2.4	22	P2.4
13	D7	13	P2.7	13	P2.7	25	P2.7
14	D6	12	P2.6	12	P2.6	24	P2.6
15	VDD	-	-	-	-	-	-
16	VPP	4	RST	4	RST	3	VPP
17	HLS	-	-	1	P1.2	-	-
18	RST	-	-	-	-	28	RST
19	-	-	-	-	-	-	-
20	ALSB/PDB	-	-	-	-	-	-

SN8P1600 Series Pin Assignment

SN8P1602/SN8P1603/SN8P1602A/SN8P1602B
(P: P-DIP 18PIN, S: SOP 18PIN, X: SSOP 20PIN)



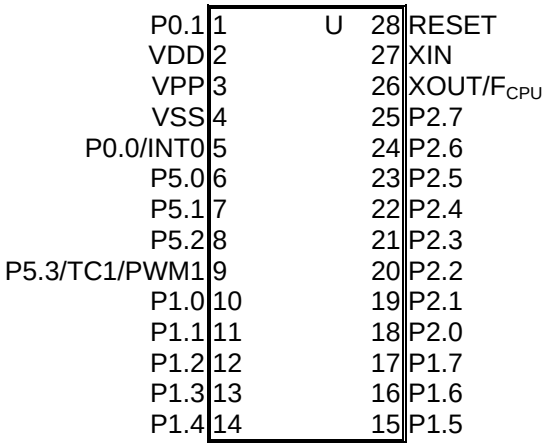
SN8P1602P
SN8P1602S
SN8P1603P
SN8P1603S
SN8P1602AP
SN8P1602AS
SN8P1602BP
SN8P1602BS



SN8P1602X
SN8P1603X
SN8P1602AX
SN8P1602BX

Note: The VPP and RST is same pin in SN8P1602/ SN8P1603/SN8P1602A/SN8P1602B

SN8P1604/SN8P1604A
(P: P-DIP 28PIN, K: SK-DIP 28PIN, S: SOP 28PIN)



SN8P1604K
SN8P1604S
SN8P1604AK
SN8P1604AP
SN8P1604AS

SN8P1700 Series

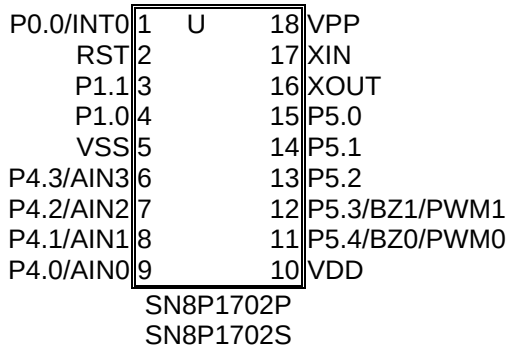
SN8P1700 Series Programming Pin Mapping

Programming Information of SN8P1700 Series											
Chip Name		SN8P1702		SN8P1704		SN8P1706		SN8P1707		SN8P1708	
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment									
Number	Pin	Number	Pin	Number	Pin	Number	Pin	Number	Pin	Number	Pin
1	VDD	10	VDD	3,14	VDD	4,22	VDD	9,28	VDD	16,36,37	VDD
2	GND	5	VSS	7,21	VSS	12,33	VSS	17,18,42	VSS	4,5,17,25, 26,43	VSS
3	CLK	17	XIN	23	XIN	35	XIN	44	XIN	7	XIN
4	CE	1	P0.0	25	P0.0	37	P0.0	2	P0.0	9	P0.0
5	PGM	3	P1.1	5	P1.1	6	P1.1	11	P1.1	19	P1.1
6	OE	4	P1.0	6	P1.0	7	P1.0	12	P1.0	20	P1.0
7	D1	8	P4.1	11	P4.1	19	P4.1	25	P4.1	33	P4.1
8	D0	9	P4.0	12	P4.0	20	P4.0	26	P4.0	34	P4.0
9	D3	6	P4.3	9	P4.3	17	P4.3	23	P4.3	31	P4.3
10	D2	7	P4.2	10	P4.2	18	P4.2	24	P4.2	32	P4.2
11	D5	14	P5.1	19	P5.1	30	P5.1	36	P5.1	46	P5.1
12	D4	15	P5.0	20	P5.0	31	P5.0	37	P5.0	47	P5.0
13	D7	12	P5.3	17	P5.3	28	P5.3	34	P5.3	44	P5.3
14	D6	13	P5.2	18	P5.2	29	P5.2	35	P5.2	45	P5.2
15	VDD	-	-	-	-	-	-	-	-	-	-
16	VPP	18	VPP	24	VPP	36	VPP	1	VPP	8	VPP
17	HLS	-	-	-	-	-	-	-	-	-	-
18	RST	2	RST	28	RST	40	RST	5	RST	12	RST
19	-	-	-	-	-	-	-	-	-	-	-
20	ALSB/PDB	-	-	-	-	-	-	-	-	-	-

➢

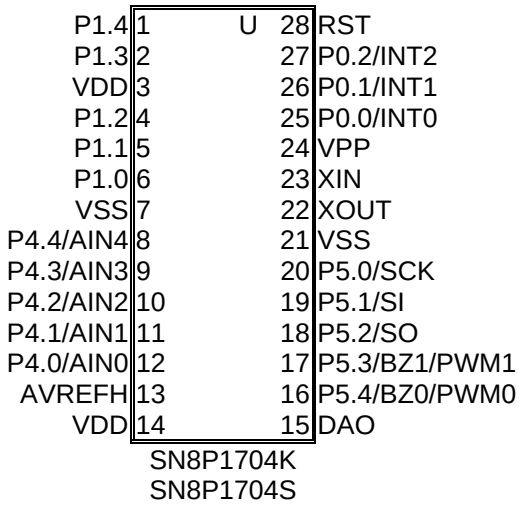
SN8P1700 Series Pin Assignment

SN8P1702 (P-DIP 18PIN, SOP 18PIN)



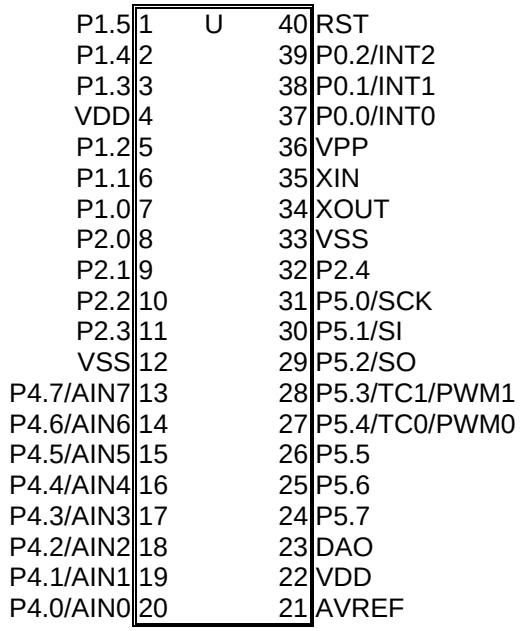
SN8P1702P
SN8P1702S

SN8P1704 (SK-DIP 28PIN, SOP 28PIN)



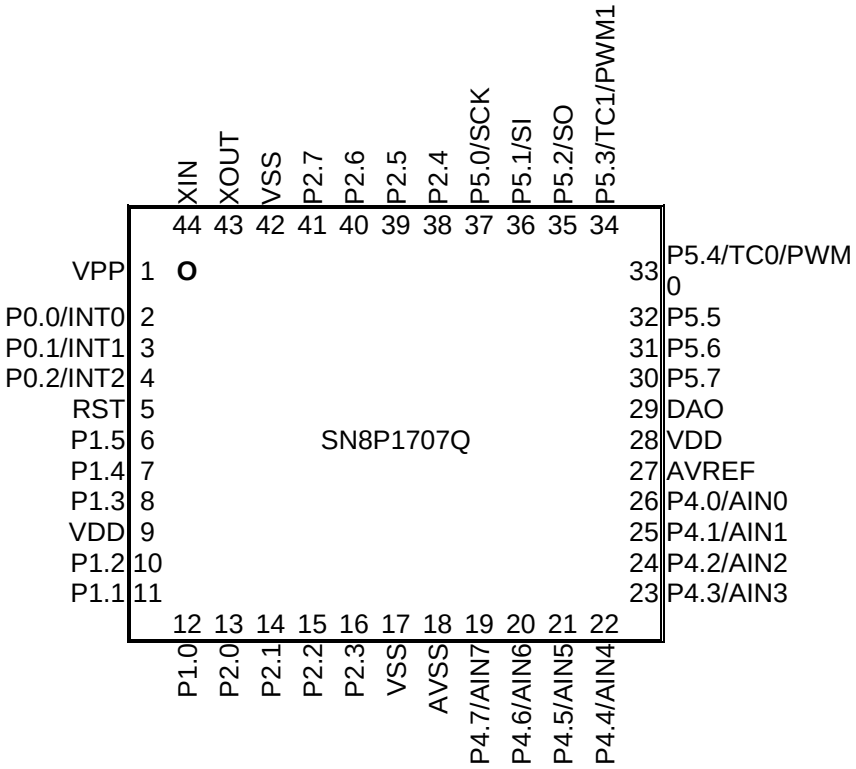
SN8P1704K
SN8P1704S

SN8P1706 (P-DIP 40PIN)

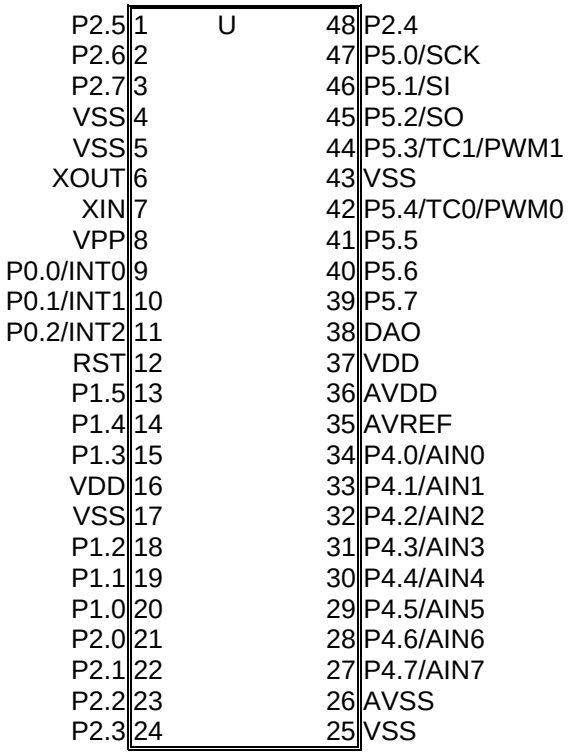


SN8P1706P

SN8P1707 (QFP 44PIN)



SN8P1708 (P-DIP and SSOP 48PIN)



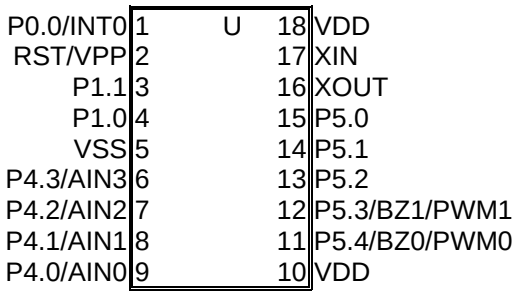
SN8P1700A Series

SN8P1700A Series Programming Pin Mapping

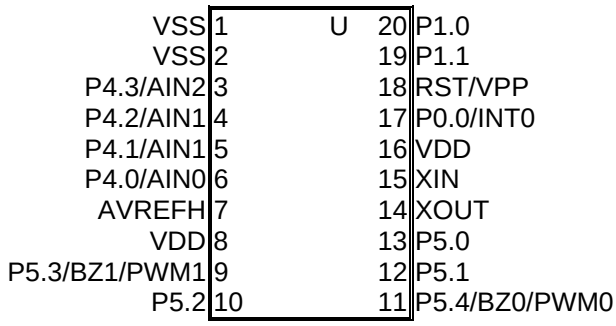
Programming Information of SN8P1700A Series					
Chip Name		SN8P1702A		SN8P1703A	
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment			
Number	Pin	Number	Pin	Number	Pin
1	VDD	10,18	VDD	11,20	VDD
2	GND	5	VSS	5	VSS
3	CLK	17	XIN	19	XIN
4	CE	1	P0.0	1	P0.0
5	PGM	3	P1.1	3	P1.1
6	OE	4	P1.0	4	P1.0
7	D1	8	P4.1	8	P4.1
8	D0	9	P4.0	9	P4.0
9	D3	6	P4.3	6	P4.3
10	D2	7	P4.2	7	P4.2
11	D5	14	P5.1	16	P5.1
12	D4	15	P5.0	17	P5.0
13	D7	12	P5.3	14	P5.3
14	D6	13	P5.2	15	P5.2
15	VDD	-	-	-	-
16	VPP	2	RST	2	RST
17	HLS	11	P5.4	13	P5.4
18	RST	-	-	-	-
19	-	-	-	-	-
20	ALSB/PDB	-	-	-	-

SN8P1700A Series Pin Assignment

SN8P1702A (P-DIP 18PIN, SOP 18PIN, SSOP 20PIN)

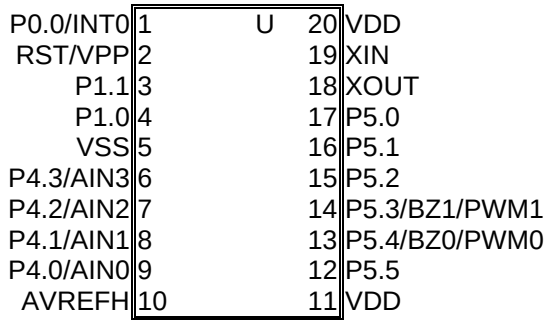


SN8P1702AP
SN8P1702AS



SN8P1702AX

SN8P1703A (P-DIP 20PIN, SOP 20PIN, SSOP 20PIN)



SN8P1703AP
SN8P1703AS
SN8P1703AX

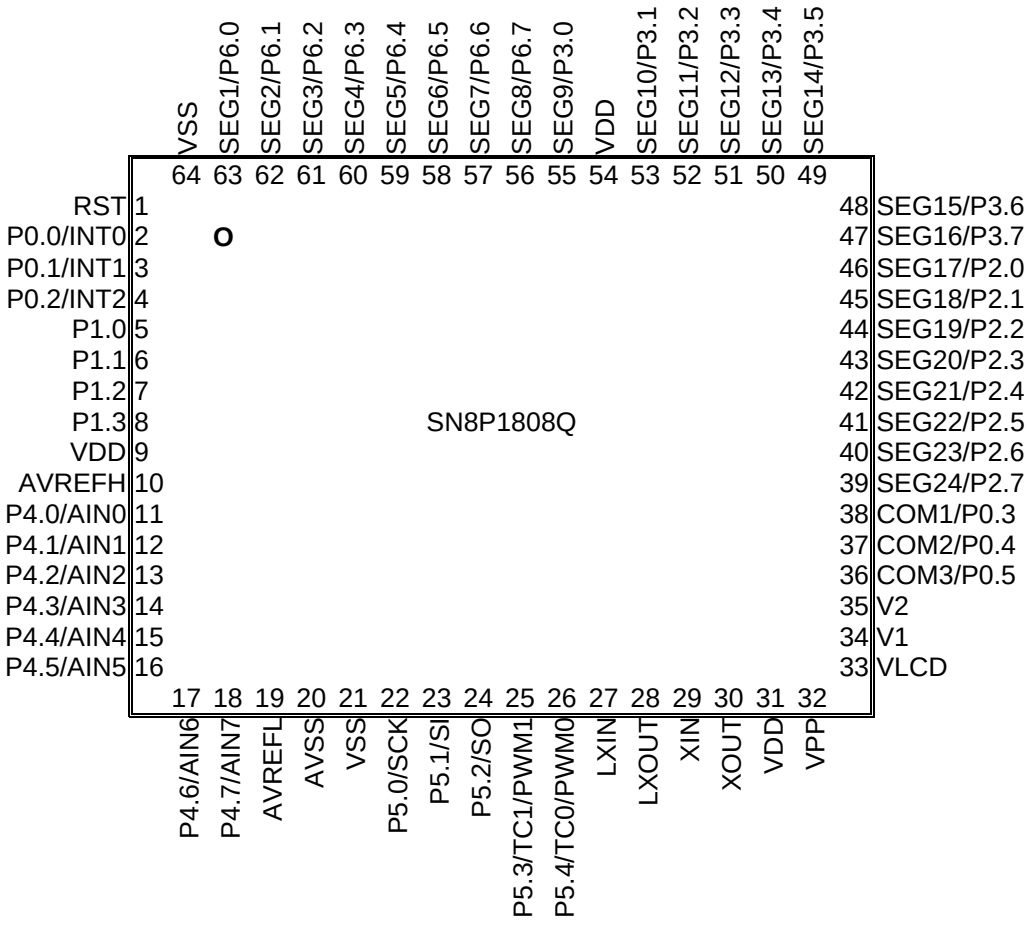
SN8P1800 Series

SN8P1800 Series Programming Pin Mapping

Programming Information of SN8P1800 Series			
Chip Name		SN8P1808	
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment	
Number	Pin	Number	Pin
1	VDD	9,31,54	VDD
2	GND	20,21,64	VSS
3	CLK	29	XIN
4	CE	2	P0.0
5	PGM	6	P1.1
6	OE	5	P1.0
7	D1	12	P4.1
8	D0	11	P4.0
9	D3	14	P4.3
10	D2	13	P4.2
11	D5	23	P5.1
12	D4	22	P5.0
13	D7	25	P5.3
14	D6	24	P5.2
15	VDD	-	-
16	VPP	32	VPP
17	HLS	-	-
18	RST	1	RST
19	-	-	-
20	ALSB/PDB	-	-

SN8P1800 Series Pin Assignment

SN8P1808 (LQFP 64PIN)



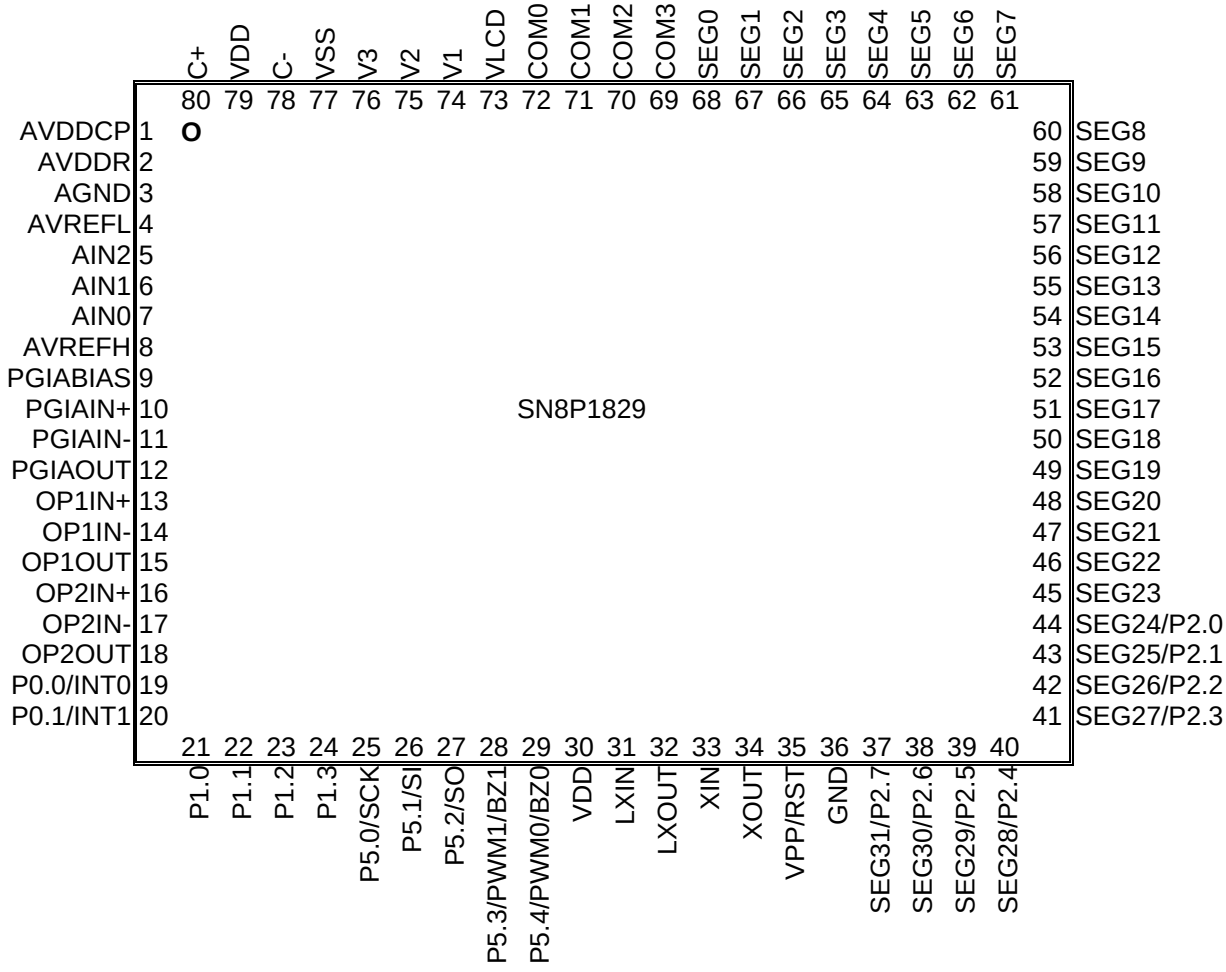
SN8P1820 Series

SN8P1820 Series Programming Pin Mapping

Programming Information of SN8P1810 Series			
Chip Name		SN8P1829	
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment	
Number	Pin	Number	Pin
1	VDD	30,79,73	VDD
2	GND	36,77	VSS
3	CLK	33	XIN
4	CE	19	P0.0
5	PGM	22	P1.1
6	OE	21	P1.0
7	D1	43	P2.1
8	D0	44	P2.0
9	D3	41	P2.3
10	D2	42	P2.2
11	D5	39	P2.5
12	D4	40	P2.4
13	D7	37	P2.7
14	D6	38	P2.6
15	VDD	30,79,73	VDD
16	VPP	35	RST
17	HLS	23	P1.2
18	RST	-	-
19	-	-	-
20	ALSB/PDB	34	XOUT

SN8P1810 Series Pin Assignment

SN8P1829 (LQFP 80PIN)



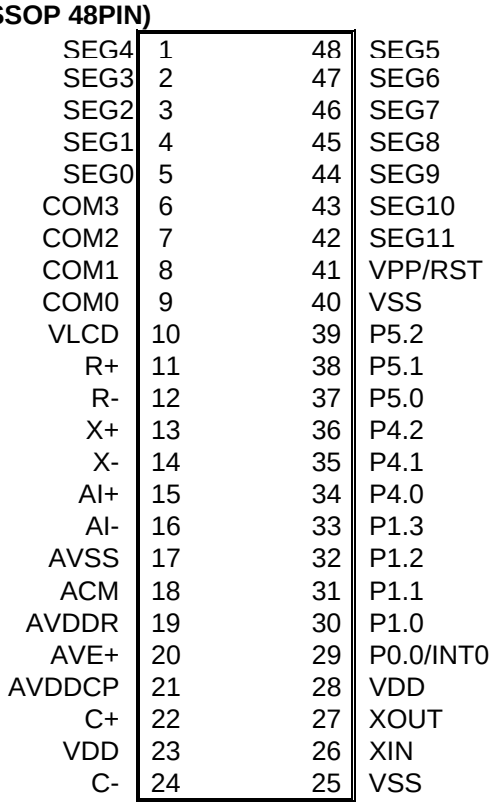
SN8P1900 Series

SN8P1900 Series Programming Pin Mapping

Programming Information of SN8P1900 Series							
Chip Name		SN8P1907		SN8P1908		SN8P1909	
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment					
Number	Pin	Number	Pin	Number	Pin	Number	Pin
1	VDD	10,23,28	VDD	3,19,26,46	VDD	2,23,30,53	VDD
2	GND	25,40	VSS	21,37	VSS	25,44	VSS
3	CLK	26	XIN	24	XIN	28	XIN
4	CE	29	P0.0	27	P0.0	31	P0.0
5	PGM	35	P4.1	33	P1.1	40	P1.1
6	OE	34	P4.0	32	P1.0	39	P1.0
7	D1	31	P1.1	44	P2.1	51	P2.1
8	D0	30	P1.0	45	P2.0	52	P2.0
9	D3	33	P1.3	42	P2.3	49	P2.3
10	D2	32	P1.2	43	P2.2	50	P2.2
11	D5	37	P5.0	40	P2.5	47	P2.5
12	D4	36	P4.2	41	P2.4	48	P2.4
13	D7	39	P5.2	38	P2.7	45	P2.7
14	D6	38	P5.1	39	P2.6	46	P2.6
15	VDD	10,23,28	VDD	3,19,26,46	VDD	2,23,30,53	VDD
16	VPP	41	VPP	31	RST	38	RST
17	HLS	42	SEG11	34	P1.2	41	P1.2
18	RST	-	-	-	-	-	-
19	-	-	-	-	-	-	-
20	ALSB/PDB	27	XOUT	25	XOUT	29	XOUT

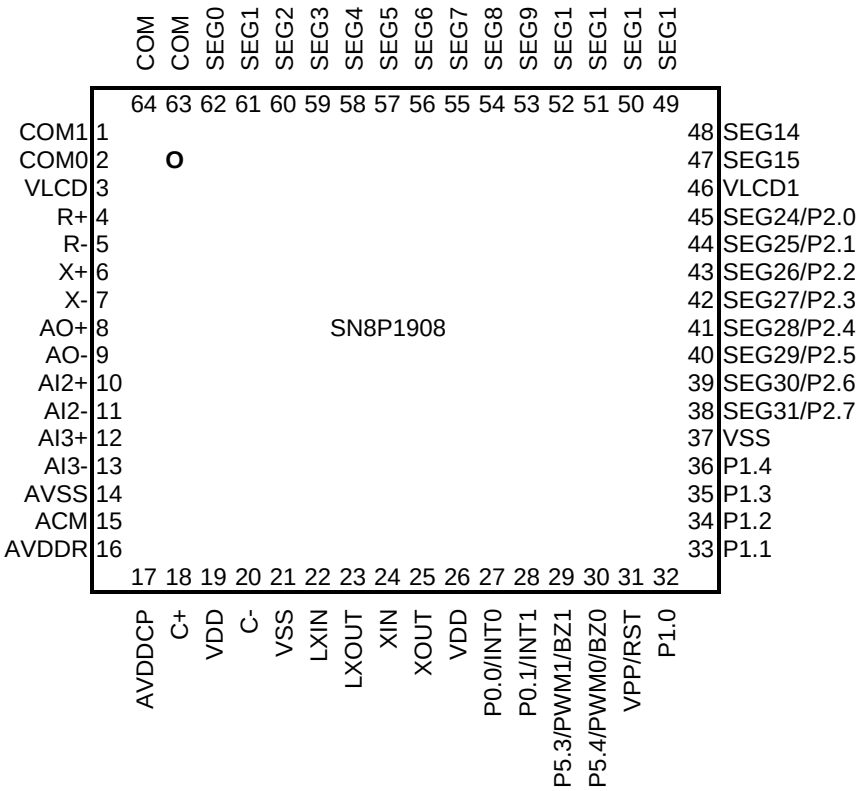
SN8P1900 Series Pin Assignment

SN8P1907 (P-DIP 48PIN, SSOP 48PIN)

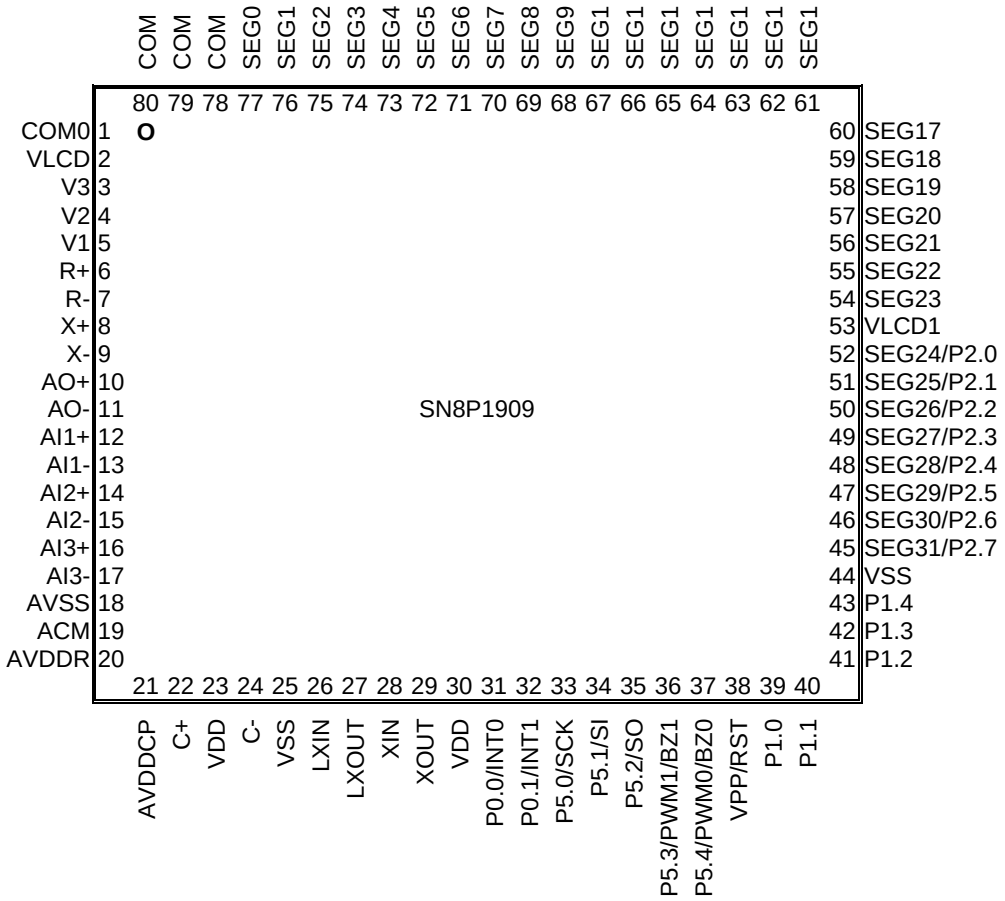


SN8P1907P
SN8P1907X

SN8P1908 (LQFP 64PIN)



SN8P1909 (LQFP 80PIN)



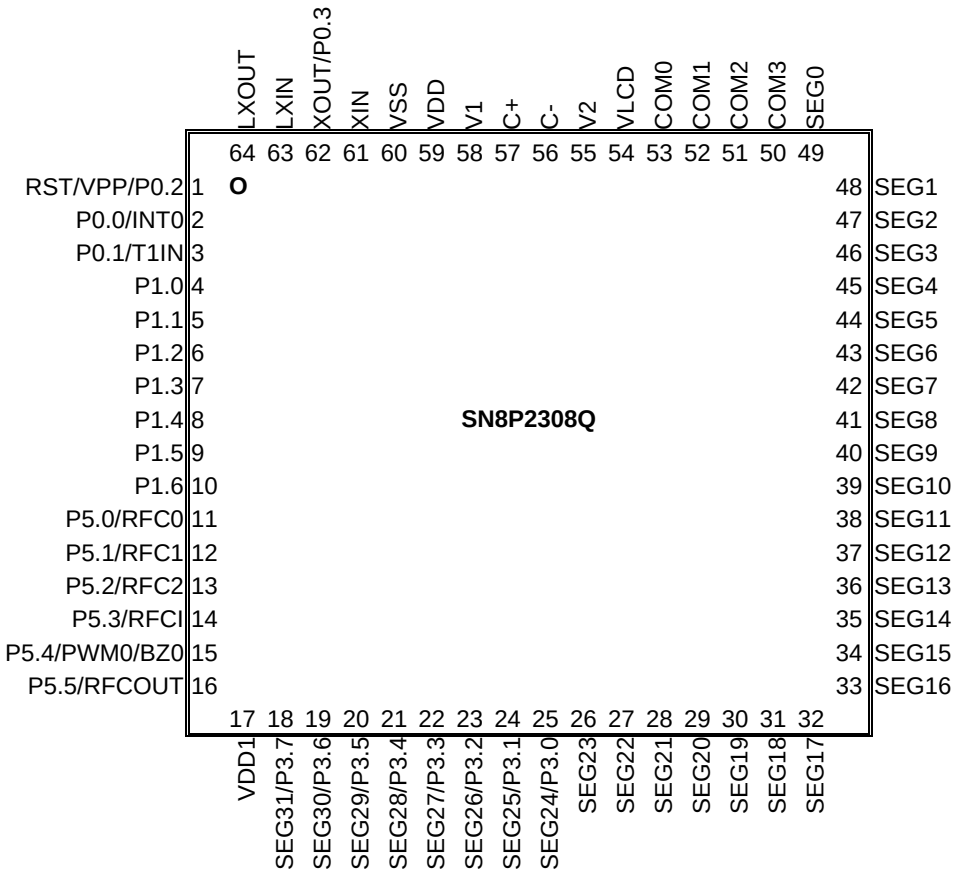
SN8P2300 Series

SN8P2300 Series Programming Pin Mapping

Programming Information of SN8P2300 Series					
Chip Name		SN8P2308			
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment			
Number	Pin	Number	Pin	Number	Pin
1	VDD	59	VDD		
2	GND	60	VSS		
3	CLK	11	P5.0		
4	CE	-	-		
5	PGM	4	P1.0		
6	OE	12	P5.1		
7	D1	-	-		
8	D0	-	-		
9	D3	-	-		
10	D2	-	-		
11	D5	-	-		
12	D4	-	-		
13	D7	-	-		
14	D6	-	-		
15	VDD	-	-		
16	VPP	1	RST		
17	HLS	-	-		
18	RST	-	-		
19	-	-	-		
20	ALSB/PDB	5	P1.1		

SN8P2300 Series Pin Assignment

SN8P2308 (LQFP 64PIN)



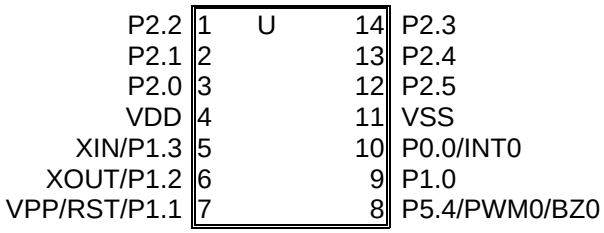
SN8P2500A Series

SN8P2500A Series Programming Pin Mapping

Programming Information of SN8P2500A Series					
Chip Name		SN8P2501A		SN8P2501AX	
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment			
Number	Pin	Number	Pin	Number	Pin
1	VDD	4	VDD	4,5	VDD
2	GND	11	VSS	12,13	VSS
3	CLK	10	P0.0	11	P0.0
4	CE	-	-	-	-
5	PGM	9	P1.0	10	P1.0
6	OE	8	P5.4	9	P5.4
7	D1	-	-	-	-
8	D0	-	-	-	-
9	D3	-	-	-	-
10	D2	-	-	-	-
11	D5	-	-	-	-
12	D4	-	-	-	-
13	D7	-	-	-	-
14	D6	-	-	-	-
15	VDD	-	-	-	-
16	VPP	7	RST	8	RST
17	HLS	-	-	-	-
18	RST	-	-	-	-
19	-	-	-	-	-
20	ALSB/PDB	6	P1.1	7	P1.1

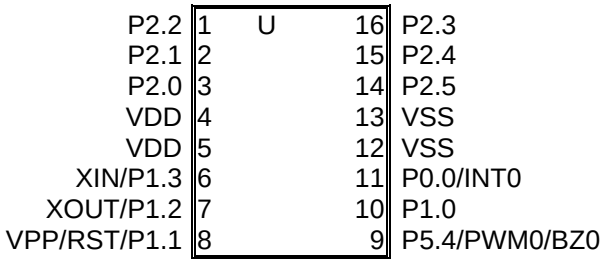
SN8P2500A Series Pin Assignment

SN8P2501A (P-DIP 14PIN, SOP 14PIN)



SN8P2501AP
SN8P2501AS

SN8P2501A (SSOP 16PIN)



SN8P2501AX

SN8P2600 Series

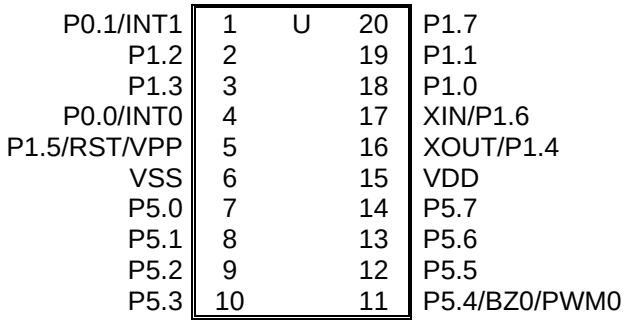
SN8P2600 Series Programming Pin Mapping

Programming Information of SN8P2600 Series											
Chip Name		SN8P2602A		SN8P2604		SN8P2606		SN8P2608		SN8P26042	
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment									
Number	Pin	Number	Pin	Number	Pin	Number	Pin	Number	Pin	Number	Pin
1	VDD	14	VDD	2	VDD	11,32	VDD	13,39	VDD	17	VDD
2	GND	5	VSS	4	VSS	12,31	VSS	14,36	VSS	18	VSS
3	CLK	6	P5.0	6	P5.0	21	P5.0	25	P5.0	20	P5.0
4	CE	-	-	-	-	-	-	-	-	-	-
5	PGM	17	P1.0	10	P1.0	40	P1.0	1	P1.0	3	P1.0
6	OE	7	P5.1	7	P5.1	20	P5.1	24	P5.1	1	P5.1
7	D1	-	-	-	-	-	-	-	-	-	-
8	D0	-	-	-	-	-	-	-	-	-	-
9	D3	-	-	-	-	-	-	-	-	-	-
10	D2	-	-	-	-	-	-	-	-	-	-
11	D5	-	-	-	-	-	-	-	-	-	-
12	D4	-	-	-	-	-	-	-	-	-	-
13	D7	-	-	-	-	-	-	-	-	-	-
14	D6	-	-	-	-	-	-	-	-	-	-
15	VDD	-	-	-	-	-	-	-	-	-	-
16	VPP	4	RST	28	RST	1	RST	2	RST	15	RST
17	HLS	-	-	-	-	-	-	-	-	-	-
18	RST	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-
20	ALSB/PDB	18	P1.1	11	P1.1	2	P1.1	3	P1.1	4	P1.1

Programming Information of SN8P2600 Series											
Chip Name		SN8P2613P/S/X		SN8P2612P/S		SN8P2612X		SN8P2624			
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment									
Number	Pin	Number	Pin	Number	Pin	Number	Pin	Number	Pin	Number	Pin
1	VDD	15	VDD	14	VDD	15,16	VDD	2	VDD		
2	GND	6	VSS	5	VSS	5,6	VSS	4	VSS		
3	CLK	7	P5.0	6	P5.0	7	P5.0	6	P5.0		
4	CE	-	-	-	-	-	-	-	-		
5	PGM	18	P1.0	17	P1.0	19	P1.0	10	P1.0		
6	OE	8	P5.1	7	P5.1	8	P5.1	7	P5.1		
7	D1	-	-	-	-	-	-	-	-		
8	D0	-	-	-	-	-	-	-	-		
9	D3	-	-	-	-	-	-	-	-		
10	D2	-	-	-	-	-	-	-	-		
11	D5	-	-	-	-	-	-	-	-		
12	D4	-	-	-	-	-	-	-	-		
13	D7	-	-	-	-	-	-	-	-		
14	D6	-	-	-	-	-	-	-	-		
15	VDD	-	-	-	-	-	-	-	-		
16	VPP	5	RST	4	RST	4	RST	28	RST		
17	HLS	-	-	-	-	-	-	-	-		
18	RST	-	-	-	-	-	-	-	-		
19	-	-	-	-	-	-	-	-	-		
20	ALSB/PDB	19	P1.1	18	P1.1	20	P1.1	11	P1.1		

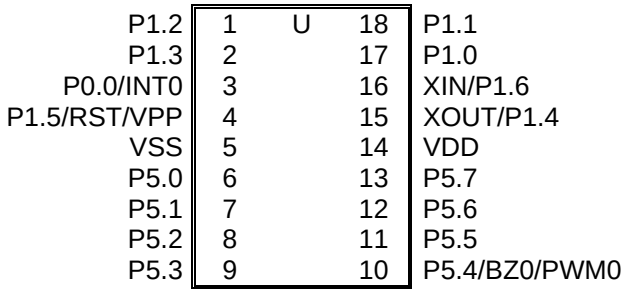
SN8P2600 Series Pin Assignment

SN8P2613P (P-DIP 20 pins)
SN8P2613S (SOP 20 pins)
SN8P2613X (SSOP 20 pins)

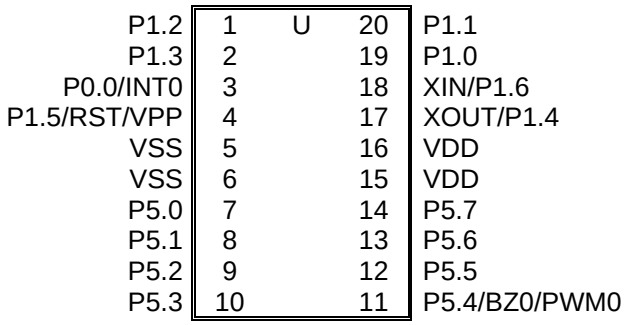


SN8P2613P
SN8P2613S
SN8P2613X

SN8P2612P (P-DIP 18 pins)
SN8P2612S (SOP 18 pins)
SN8P2612X (SSOP 20 pins)

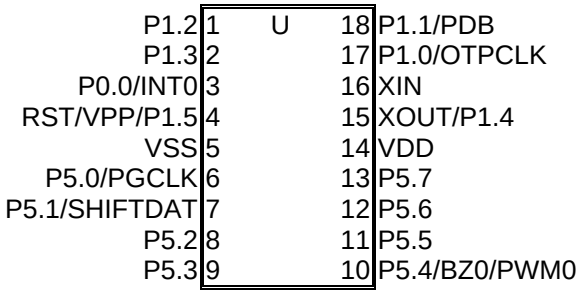


SN8P2612P
SN8P2612S



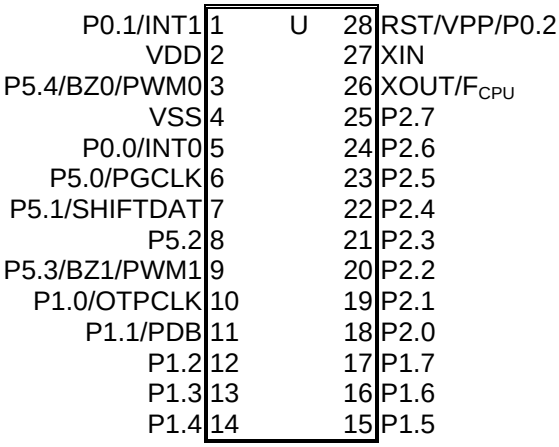
SN8P2612X

SN8P2602AP (P-DIP 18 pins)
SN8P2602AS (SOP 18 pins)



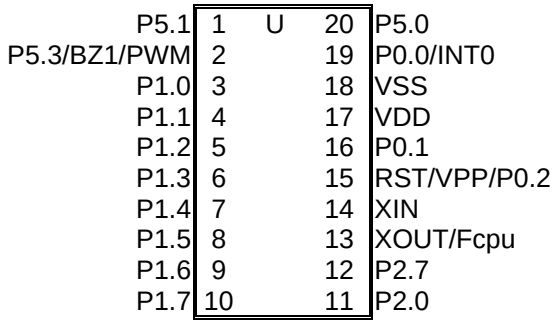
SN8P2602AP
SN8P2602AS

SN8P2604K (SK-DIP 28 pins)
SN8P2604S (SOP 28 pins)
SN8P2624K (SK-DIP 28 pins)
SN8P2624S (SOP 28 pins)



SN8P2604K
SN8P2604S

SN8P26042P (P-DIP 20 pins)
SN8P26042S (SOP 20 pins)
SN8P26042X (SSOP 20 pins)



SN8P26042P
SN8P26042S
SN8P26042X

SN8P2606P (P-DIP 40 pins)

RST/VPP/P4.7	1	U	40	P1.0
P1.1	2		39	P0.7
P1.2	3		38	P0.6
P1.3	4		37	P0.5
P1.4	5		36	P0.4
P0.1/INT1	6		35	P0.3
P1.5	7		34	P0.2
P1.6	8		33	P0.0/INT0
P1.7	9		32	VDD
P4.0	10		31	VSS
VDD	11		30	P2.7
VSS	12		29	P2.6
XIN	13		28	P2.5
XOUT/Fcpu	14		27	P2.4
P4.2	15		26	P2.3
P5.5	16		25	P2.2
P5.4	17		24	P2.1
P5.3/PWM1/BZ1	18		23	P2.0
P5.2	19		22	P5.6
P5.1	20		21	P5.0

SN8P2606P

SN8P2608P (P-DIP 48 pins)
SN8P2608X (SSOP 48 pins)

P1.0	1	U	48	P0.7
RST/VPP/P4.7	2		47	P0.6
P1.1	3		46	P0.5
P1.2	4		45	P4.6
P1.3	5		44	P4.5
P1.4	6		43	P0.4
P0.1/INT1	7		42	P0.3
P1.5	8		41	P0.2
P1.6	9		40	P0.0/INT0
P1.7	10		39	VDD
P4.0	11		38	NC
P4.1	12		37	NC
VDD	13		36	VSS
VSS	14		35	P2.7
XIN	15		34	P2.6
XOUT/Fcpu	16		33	P2.5
P4.2	17		32	P2.4
P4.3	18		31	P2.3
P4.4	19		30	P2.2
P5.5	20		29	P2.1
P5.4	21		28	P2.0
P5.3/PWM1/BZ1	22		27	P5.6
P5.2	23		26	P5.7
P5.1	24		25	P5.0

SN8P2608P
SN8P2608X

SN8P2700A Series

SN8P2700A Series Programming Pin Mapping

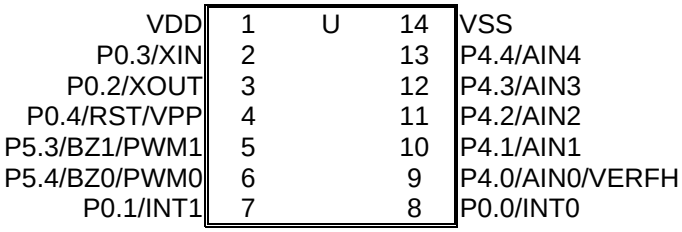
OTP Programming Pin of SN8P2700 Series											
Chip Name		SN8P2704A		SN8P2705A		SN8P2706A		SN8P2707A		SN8P2708A	
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment									
Number	Pin	Number	Pin	Number	Pin	Number	Pin	Number	Pin	Number	Pin
1	VDD	3,14,24	VDD	4,26	VDD	4,22,36	VDD	1,9,28	VDD	8,16,36,37	VDD
2	GND	7,21	VSS	1,16	VSS	12,33	VSS	17,42	VSS	5,25	VSS
3	CLK	20	P5.0	32	P5.0	31	P5.0	37	P5.0	47	P5.0
4	CE	-	-	-	-	-	-	-	-	-	-
5	PGM	6	P1.0	14	P1.0	7	P1.0	12	P1.0	20	P1.0
6	OE	19	P5.1	31	P5.1	30	P5.1	36	P5.1	46	P5.1
7	D1	-	-	-	-	-	-	-	-	-	-
8	D0	-	-	-	-	-	-	-	-	-	-
9	D3	-	-	-	-	-	-	-	-	-	-
10	D2	-	-	-	-	-	-	-	-	-	-
11	D5	-	-	-	-	-	-	-	-	-	-
12	D4	-	-	-	-	-	-	-	-	-	-
13	D7	-	-	-	-	-	-	-	-	-	-
14	D6	-	-	-	-	-	-	-	-	-	-
15	VDD	3,14,24	VDD	4,26	VDD	3,14,24	VDD	1,9,28	VDD	8,16,36,37	VDD
16	VPP	28	RST	8	RST	40	RST	5	RST	12	RST
17	HLS	-	-	-	-	-	-	-	-	-	-
18	RST	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-
20	ALSB/PDB	5	P1.1	13	P1.1	6	P1.1	11	P1.1	19	P1.1

OTP Programming Pin of SN8P2710 Series											
Chip Name		SN8P2714		SN8P2715		SN8P27142		SN8P27143			
Easy, MP-EZ Writer And Writer V3.0		OTP IC / JP3 Pin Assignment									
Number	Pin	Number	Pin	Number	Pin	Number	Pin	Number	Pin		
1	VDD	25	VDD	30	VDD	12	VDD	13	VDD		
2	GND	15	VSS	20	VSS	6	VSS	5	VSS		
3	CLK	4	P5.0	6	P5.0	17	P5.0	18	P5.0		
4	CE	-	-	-	-	-	-	-	-		
5	PGM	8	P2.0	10	P2.0	2	P2.0	1	P2.0		
6	OE	3	P5.1	5	P5.1	16	P5.1	17	P5.1		
7	D1	-	-	-	-	-	-	-	-		
8	D0	-	-	-	-	-	-	-	-		
9	D3	-	-	-	-	-	-	-	-		
10	D2	-	-	-	-	-	-	-	-		
11	D5	-	-	-	-	-	-	-	-		
12	D4	-	-	-	-	-	-	-	-		
13	D7	-	-	-	-	-	-	-	-		
14	D6	-	-	-	-	-	-	-	-		
15	VDD	25	VDD	30	VDD	12	VDD	13	VDD		
16	VPP	26	RST	31	RST	13	RST	14	RST		
17	HLS	-	-	-	-	-	-	-	-		
18	RST	-	-	-	-	-	-	-	-		
19	-	-	-	-	-						
20	ALSB/PDB	9	P2.1	11	P2.1	3	P2.1	2	P2.1		

OTP Programming Pin of SN8P2711 Series											
Chip Name		SN8P2711P,S		SN8P2711X							
EZ Writer / Writer V3.0		OTP IC / JP3 Pin Assignment									
Number	Pin	Number	Pin	Number	Pin						
1	VDD	1	VDD	1	VDD						
2	GND	14	VSS	16	VSS						
3	CLK	9	P4.0	11	P4.0						
4	CE	-	-	-	-						
5	PGM	13	P4.4	15	P4.4						
6	OE	10	P4.1	12	P4.1						
7	D1	-	-	-	-						
8	D0	-	-	-	-						
9	D3	-	-	-	-						
10	D2	-	-	-	-						
11	D5	-	-	-	-						
12	D4	-	-	-	-						
13	D7	-	-	-	-						
14	D6	-	-	-	-						
15	VDD	-	-	-	-						
16	VPP	4	RST	4	RST						
17	HLS	-	-	-	-						
18	RST	-	-	-	-						
19	-	-	-	-	-						
20	ALSB/PDB	3	P0.2	3	P0.2						

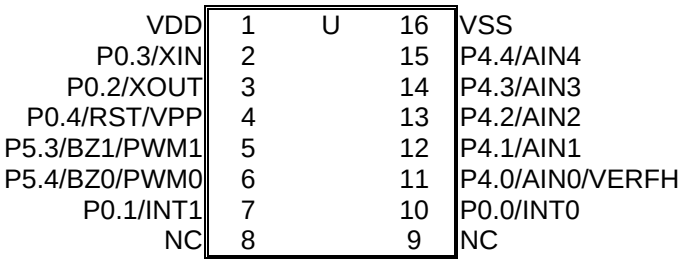
SN8P2700 Series Pin Assignment

SN8P2711P (P-DIP 14 pins)
SN8P2711S (SOP 14 pins)



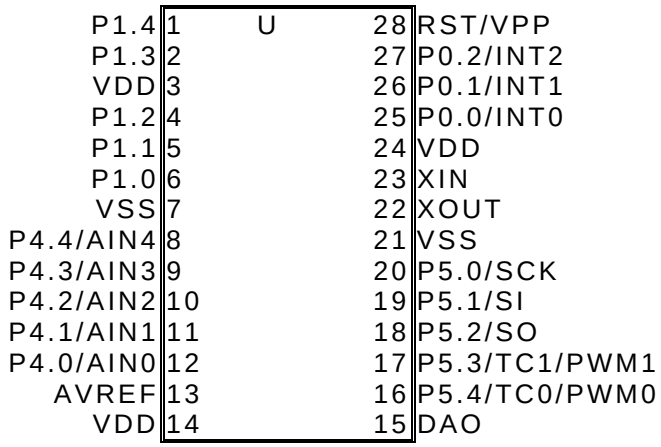
SN8P2711P
SN8P2711S

SN8P2711X (SSOP 16 pins)



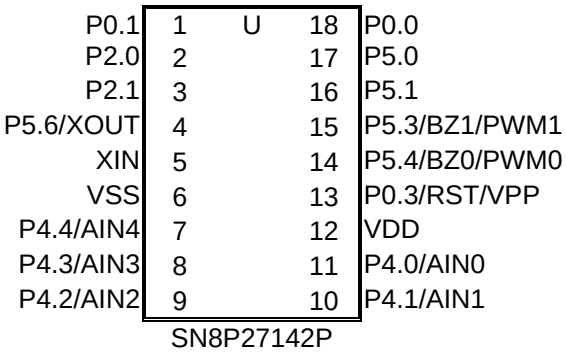
SN8P2711X

SN8P2704A (P-DIP 28PIN)



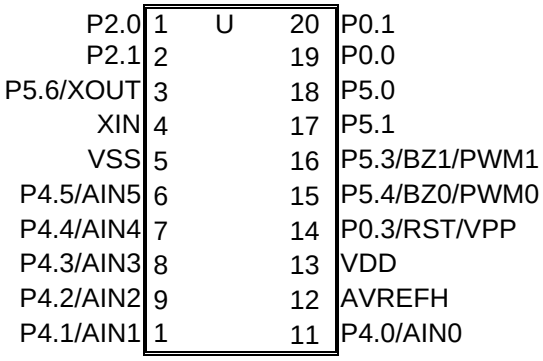
SN8P2704AK
SN8P2704AS

SN8P27142P (P-DIP 18 pins)
SN8P27142S (SOP 18 pins)



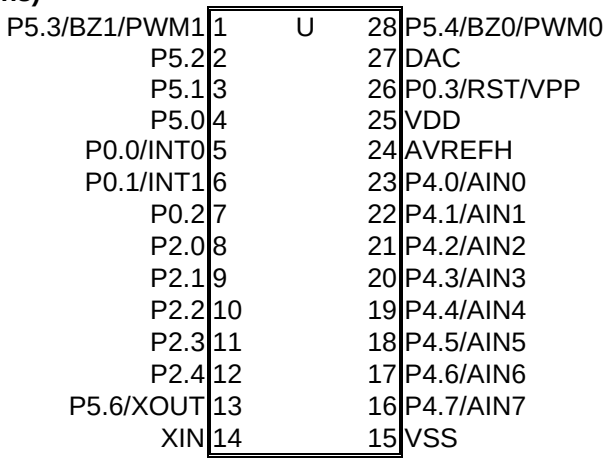
SN8P27142P
SN8P27142S

SN8P27143P (P-DIP 20 pins)
SN8P27143S (SOP 20 pins)
SN8P27143X (SSOP 20 pins)



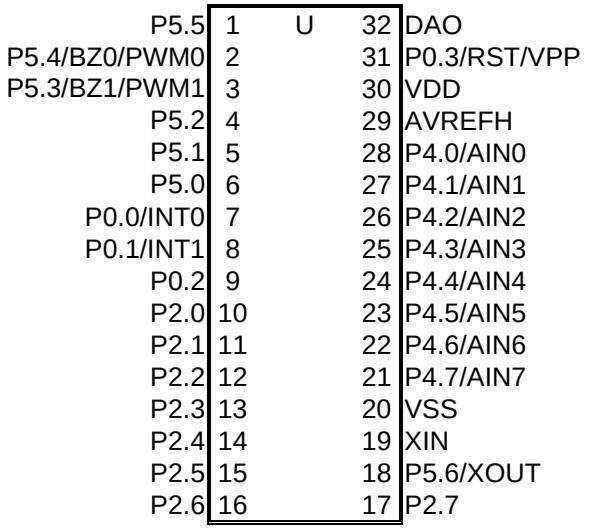
SN8P27143P
SN8P27143S
SN8P27143X

SN8P2714K (SK-DIP 28 pins)
SN8P2714S (SOP 28 pins)



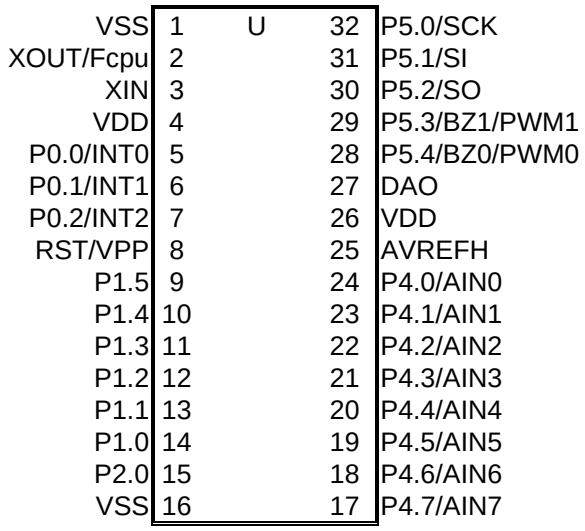
SN8P2714K
SN8P2714S

SN8P2715P (P-DIP 32 pins)
SN8P2715S (SOP 32 pins)



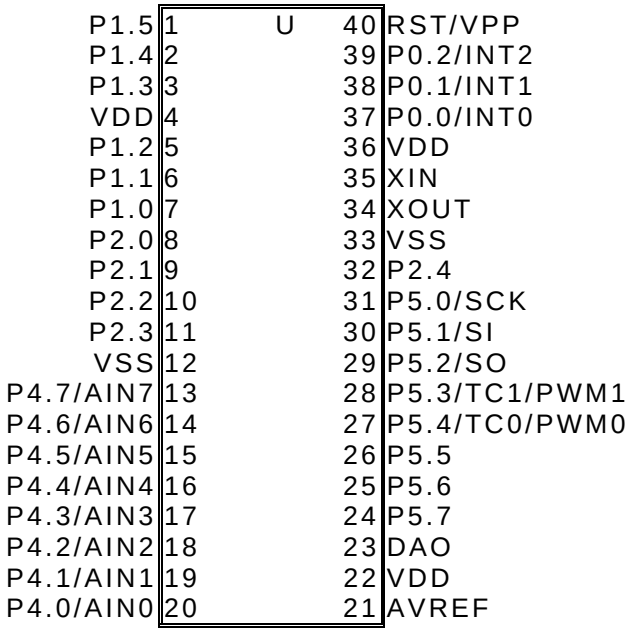
SN8P2715P
SN8P2715S

SN8P2705AP (P-DIP 32 pins)
SN8P2705AS (SOP 32 pins)



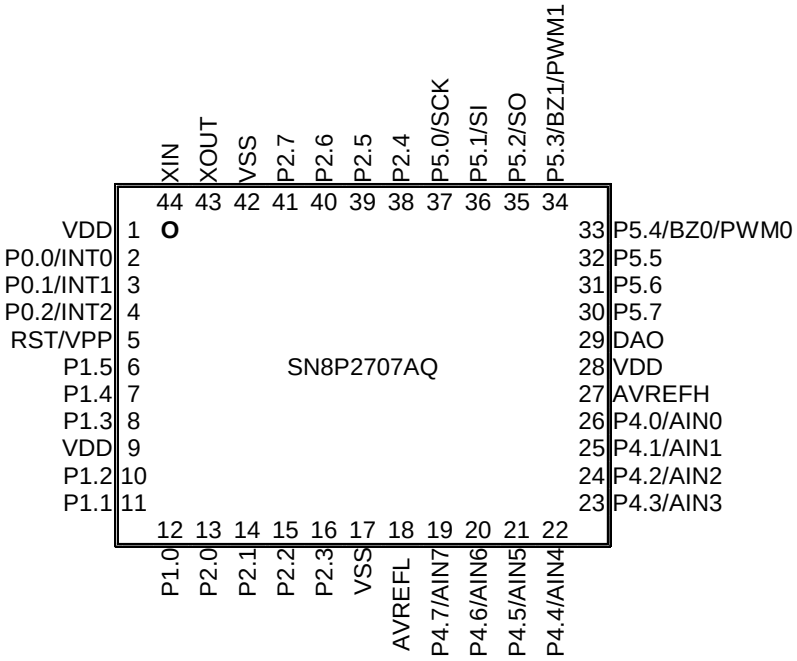
SN8P2705AP
SN8P2705AS

SN8P2706A (P-DIP 40 pins)

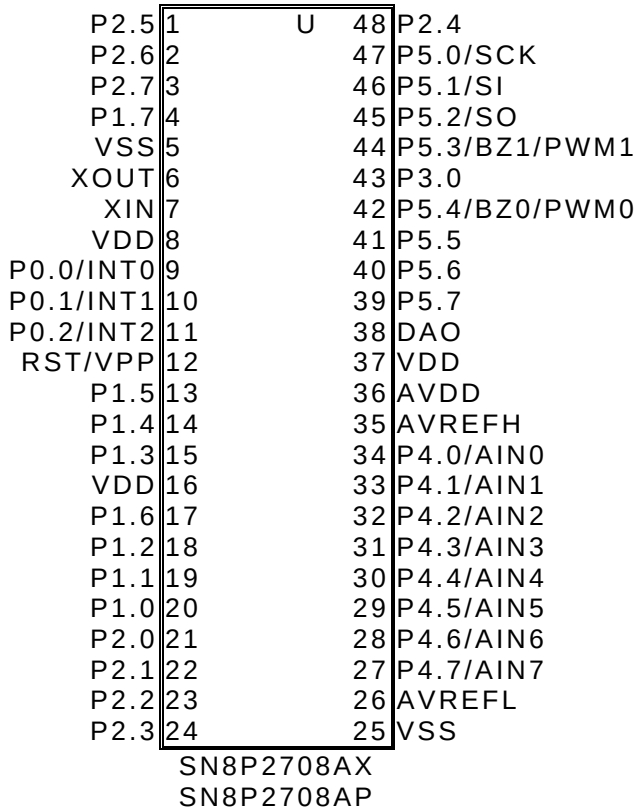


SN8P2706AP

SN8P2707A (QFP 44 pins)



SN8P2708A (P-DIP 48 pins)



APPENDIX C ACCESSORY LIST

Accessory name	Amount	Instruction
Easy Writer	1	Programming board.
60PIN cable	1	Connect with ICE and EZ Writer.
60PIN stitches	1	Connect with 60PIN cable and ICE.
20PIN cable	1	To connect with ICE transition board.

Main Office:
Address: 9F, NO. 8, Hsien Cheng 5th St, Chupei City, Hsinchu, Taiwan R.O.C.
Tel: 886-3-551 0520
Fax: 886-3-551 0523

Taipei Office:
Address: 15F-2, NO. 171, Song Ted Road, Taipei, Taiwan R.O.C.
Tel: 886-2-2759 1980
Fax: 886-2-2759 8180

Hong Kong Office:
Address: Flat 3 9/F Energy Plaza 92 Granville Road, Tsimshatsui East Kowloon.
Tel: 852-2723 8086
Fax: 852-2723 9179

Technical Support by Email:
Sn8fae@sonix.com.tw