

DragonSN Configuration tool

User Guide/v1.5

Document History

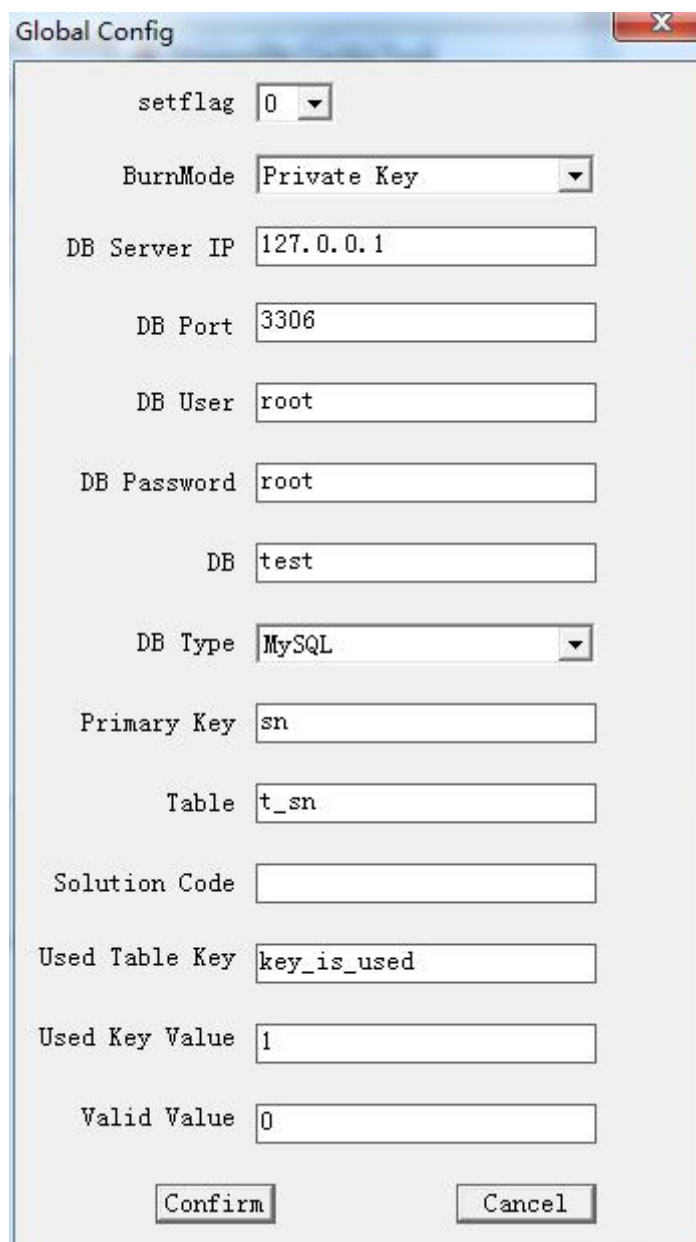
Version	Date	Author	Content
v1.0	2015-05-01		Create
V1.1	2017-05-02	Leo	Update
V1.2	2017-05-18	Leo	Update
V1.3	2018-06-26	Yorick	Update
V1.4	2018-10-19	zhubin	Add binary associated primary key options
V1.5	2018-12-17	zhubin	Add mixed key support

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2. Global Configuration

Click “Global” button then the global config dialog popup:



The Global Config dialog box contains the following fields and controls:

- setflag**: A dropdown menu currently set to 0.
- BurnMode**: A dropdown menu currently set to Private Key.
- DB Server IP**: A text input field containing 127.0.0.1.
- DB Port**: A text input field containing 3306.
- DB User**: A text input field containing root.
- DB Password**: A text input field containing root.
- DB**: A text input field containing test.
- DB Type**: A dropdown menu currently set to MySQL.
- Primary Key**: A text input field containing sn.
- Table**: A text input field containing t_sn.
- Solution Code**: An empty text input field.
- Used Table Key**: A text input field containing key_is_used.
- Used Key Value**: A text input field containing 1.
- Valid Value**: A text input field containing 0.
- Buttons**: Confirm and Cancel buttons at the bottom.

2.1. Config Setflag



The setflag dropdown menu is shown with the value 0 selected.

Choose whether or not to write to device a flag that need to detect USB next time.

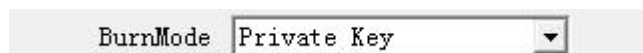
0: means that device still need to detect USB for writting key next boot.

1: means that device no longer to detect USB for writting key next boot.

If “setflag” set to 1, after the first write is completed, it will not be able to use the tool to write second times, that is to say, turn off the

function for write key. The aim is to reduce the USB detection time at each start of 1 second.

2.2. Config BurnMode



The “BurnMode” determines DragonSN tool to store the key information to the physical location of the device end. It supports private key/ security key, and recommends the use of secure key on the platform supporting security storage, otherwise private key can be used.

Private Key:Stored in private logical partitions, data in this partition can not be reset by re fixing the firmware, but it can be mounted at the system level.

Secure key:Stored in physical partition, the data of the partition can not be reset by re fixing the firmware, and can only be operated by DragonSN.

Mixed Key:

2.3. Config Database

Global Config

setflag 0

BurnMode Private Key

DB Server IP 127.0.0.1

DB Port 3306

DB User root

DB Password root

DB test

DB Type MySQL

Primary Key sn

Table t_sn

Solution Code

Used Table Key key_is_used

Used Key Value 1

Valid Value 0

Confirm Cancel

Data related configuration can be achieved through remote database access to a series of associated Key values for write, which is very convenient for factory management. The related configuration items include: “DB Server IP”, “DB Port”, “DB User”, “DB Password”, “DB”, “DB Type”, “Primary Key”, “Table”, “Used Table Key”, “Used Key Value”, and “Valid Value”.

DB Server IP: Fill in the database server IP address, if you do not use the database, this must be empty

DB Port: Fill in the database port number. The port number must be numeric

DB User: Fill in the name of the username used to log in the database

DB Password: Fill in the password for the login database

DB: Fill in the name of the database instance that is accessed

DB Type: Select the database type of the connection to support sqlserver、mysql、sqlite3

Table: Fill in the name of the table where all the associated Key is located

Primary Key: The primary key is the input condition when getting the associated key, fill in the “Name” of primary key.

Used Table Key: Only need to configure when the table used contains Key has used the flag table key,, fill in the table key name used to identify the use state.

Used Key Value: When the table that uses the Key has already been used with the flag table key, it is necessary to configure the table key to identify the use state for the state value that has been used (only to support the numeric type).

Valid Value: When the table that uses the Key has already been used with the flag table key, it needs to be configured to fill in the state value of the table key used to identify the use state for use (only to support the numeric type).

2. 4. Config Solution Code

Solution Code

Solution Code can be used to customize different functions for different solutions and generally do not need to be used. If you want to confirm the content or have a custom requirement, please contact your FAE.

3. Config Key item

Click “ADD” button on main dialog and popup “Add key” dialog

Choose by “Type” combo to select key type want want to add.

The screenshot shows a 'Config Item' dialog box with the following fields and values:

Field	Value
Type	Format (dropdown menu open)
BurnMode	++/--
Name	
Key Name	
key type	rotpk
Value	Keymaster
Match	
Checksum Value	

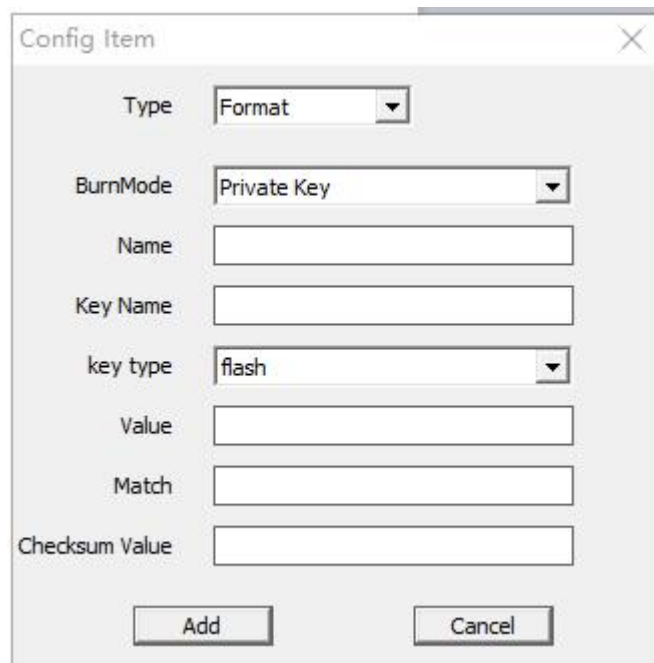
Buttons: Add, Cancel

All types of key have 4 common informations, including “BurnMode”, “Name”, “Key Name”, “Key Type”, “Match”

1. “BurnMode” This option is optional when the global configuration is a mixed key, and is not optional when the global configuration is a secure key or a private key and is the default value.
2. “Name” for show on DragonSN, not allowed to be empty.
3. “Key Name” for device key name, not allowed to be empty.
4. “Key Type” for storage location, reserved by default
5. “Match” for check key format, refer to [appendix](#), empty is allowed

Note: Type “Excel、partition、SDK” Discarded !

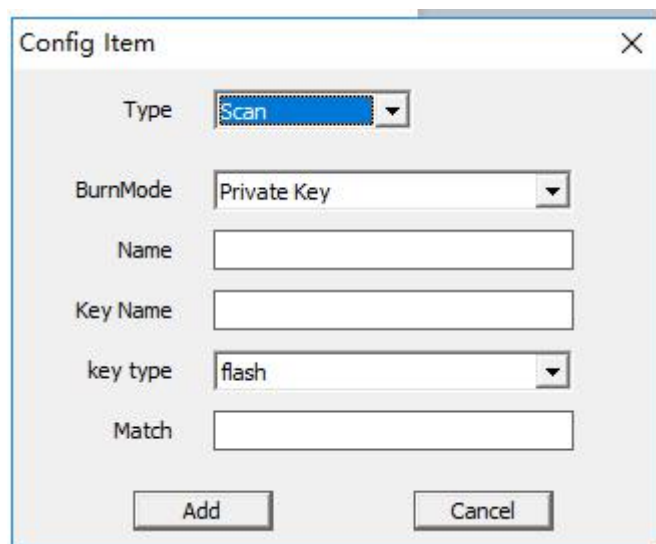
3.1. “Format” Key type



The screenshot shows the 'Config Item' dialog box with the 'Type' dropdown set to 'Format'. The 'BurnMode' dropdown is set to 'Private Key'. The 'Name' field is empty. The 'Key Name' field is empty. The 'key type' dropdown is set to 'flash'. The 'Value' field is empty. The 'Match' field is empty. The 'Checksum Value' field is empty. At the bottom, there are 'Add' and 'Cancel' buttons.

The “Format” type of Key needs to configure the value of key. DragonSN will use this value at every time when it is wrote, and there will be no change. Checksum does not need to be filled in.

3.2. “Scan” Key type



The screenshot shows the 'Config Item' dialog box with the 'Type' dropdown set to 'Scan'. The 'BurnMode' dropdown is set to 'Private Key'. The 'Name' field is empty. The 'Key Name' field is empty. The 'key type' dropdown is set to 'flash'. The 'Match' field is empty. At the bottom, there are 'Add' and 'Cancel' buttons.

The key value of the “Scan” type is input by scanning gun, and the corresponding edit box will be emptied after each writing process completed.

3.3. “Increasing / decreasing” key type

The image shows a 'Config Item' dialog box with the following fields and controls:

- Type:** A dropdown menu currently showing '++/--'.
- BurnMode:** A dropdown menu currently showing 'Private Key'.
- Name:** An empty text input field.
- Key Name:** An empty text input field.
- key type:** A dropdown menu currently showing 'flash'.
- Original Value:** An empty text input field.
- Type:** A dropdown menu currently showing 'Hex plus 1'.
- Match:** An empty text input field.
- Buttons:** 'Add' and 'Cancel' buttons at the bottom.

"Incremental / diminishing" specific controls are described as follows:

Original value: fill in the original value of Key to begin to increase and decrease. After each write, the value of key increases or decreases in the way of "Type" as defined by the original value.

Type: determine the dynamic way of key, support "10 hexadecimal plus 1, 10 minus 1, 16 hexadecimal plus 1, 16 minus 1, 36 36 plus 1, 36 base reduction".

3.4. “TXT”、“CSV” Key type

The image displays two screenshots of the 'Config Item' dialog box, illustrating the configuration for importing data from a TXT or CSV file.

Top Screenshot (TXT Type):

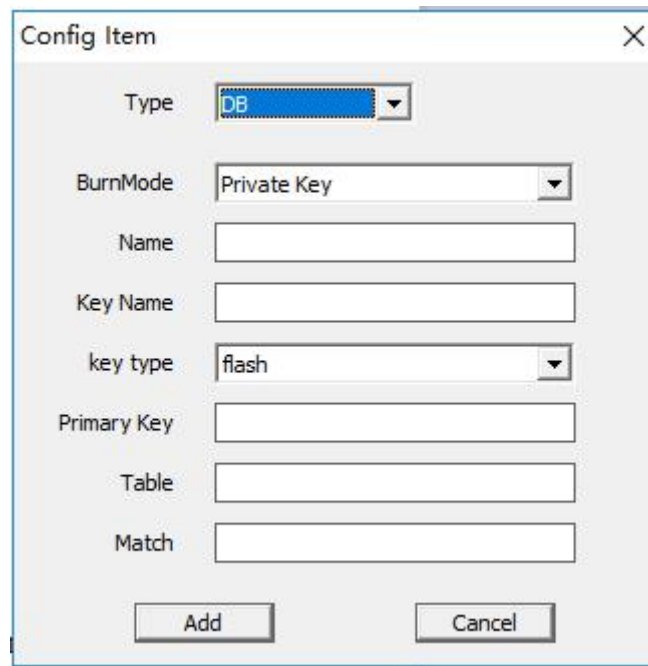
- Type: TXT
- BurnMode: Private Key
- Name: (empty text box)
- Key Name: (empty text box)
- key type: flash
- Circle: ☐
- Match: (empty text box)
- Buttons: Add, Cancel

Bottom Screenshot (CSV Type):

- Type: CSV
- BurnMode: Private Key
- Name: (empty text box)
- Key Name: (empty text box)
- key type: flash
- Match: (empty text box)
- Buttons: Add, Cancel

Txt, CSV type key is required to import a TXT text text text or CSV file when working with a write tool. The tool will automatically import each line of the file as a key value into the internal database, and the number of lines of the file determines the number of the imported Key.

3.5. “DB” Key type



The image shows a 'Config Item' dialog box with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Type:** A dropdown menu with 'DB' selected.
- BurnMode:** A dropdown menu with 'Private Key' selected.
- Name:** An empty text input field.
- Key Name:** An empty text input field.
- key type:** A dropdown menu with 'flash' selected.
- Primary Key:** An empty text input field.
- Table:** An empty text input field.
- Match:** An empty text input field.
- Buttons:** 'Add' and 'Cancel' buttons at the bottom.

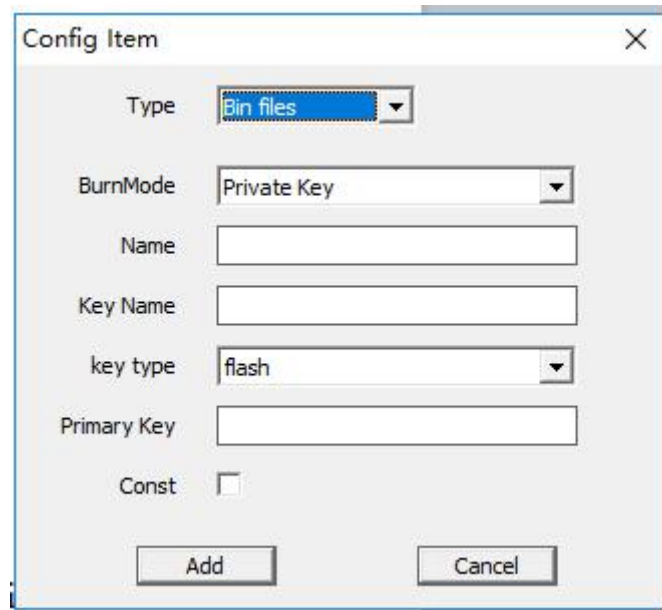
The Key of the database type relies on the database configuration information in the global configuration, and connects the remote database to the corresponding key values based on the values of the associated primary key.

When the associated primary key is empty, the default primary key is automatically used in the global configuration.

When the datasheet is empty, the default table is automatically used in the global configuration.

A case of database configuration can be referred to [a case of database configuration](#).

3.6. “Bin files” Key type



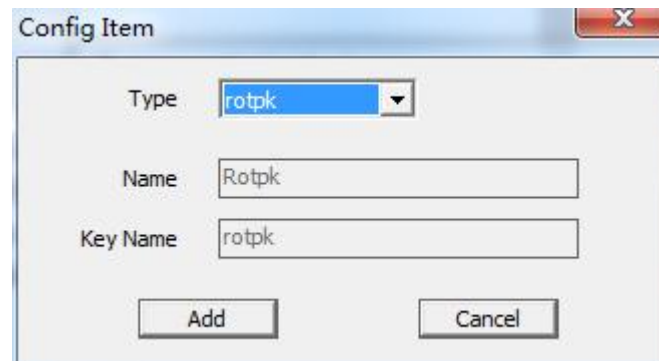
The 'Config Item' dialog box for 'Bin files' key type contains the following fields and controls:

- Type:** A dropdown menu with 'Bin files' selected.
- BurnMode:** A dropdown menu with 'Private Key' selected.
- Name:** An empty text input field.
- Key Name:** An empty text input field.
- key type:** A dropdown menu with 'flash' selected.
- Primary Key:** An empty text input field.
- Const:** An unchecked checkbox.
- Buttons:** 'Add' and 'Cancel' buttons at the bottom.

The binary configuration item specifies the key directory when the tool is in use. Each file content in the selected directory is treated as a key value. Each key burned by the tool deletes the corresponding file (and backs up to the directory named *_user under the same parent directory). The key file selected is named according to the associated K when the primary key is not empty. Ey to select the filename.

When Const is checked, the tool reads only one file in the directory and does not delete it after the burning is complete, so checking the const item should ensure that there is only one *. bin file in the directory.

3.7. “rotpk” Key type



The 'Config Item' dialog box for 'rotpk' key type contains the following fields and controls:

- Type:** A dropdown menu with 'rotpk' selected.
- Name:** A text input field containing 'Rotpk'.
- Key Name:** A text input field containing 'rotpk'.
- Buttons:** 'Add' and 'Cancel' buttons at the bottom.

The rotpk configuration item is specified when the tool is used, and every time it is burnt, the text is always used. **Rotpk only allows the burning to write once and the device can burn the specified secure firmware only after burning and writing. Be sure to be careful.**

3.8. “keymaster” key type



Keymaster chain configuration item is used in the specified directory when the tool is used. Every time the writing always uses the contents of the specified directory file under the directory, "Use Count Limit" can fill in the maximum number of write times of the file in the directory, and the Keymaster requirements are in accordance with the following file structure.

名称	修改日期	类型	大小
ec_cert1	2018/6/15 9:00	文件夹	
ec_cert2	2018/4/1 15:02	文件夹	
ec_cert3	2018/4/1 15:02	文件夹	
ec_key	2018/4/1 15:02	文件夹	
rsa_cert1	2018/4/1 15:02	文件夹	
rsa_cert2	2018/4/1 15:02	文件夹	
rsa_cert3	2018/4/1 15:02	文件夹	
rsa_key	2018/4/1 15:02	文件夹	

3.9. Edit/Delete Key

Selecting "Edit" in a single line of double clicking the left mouse button or right clicking on the pop-up menu will pop up the configuration interface of the type Key, which can be viewed or modified in the configuration interface. After modifying the parameters, click Save button to save the settings.。

After a row right-click, the delete in the pop-up menu will delete a configuration, but it will first pop up the prompt box. If you want to delete, click OK to delete the selected item; click Cancel to cancel the delete operation

Appendix1 Match

“match” The main purpose of this field is to determine whether the Key value meets the requirements, such as length, character limit, format, and so on. Here's the syntax of the regular table:

\: escape character

?: Representing any character

fix_mac:fix mac to format AA:BB:CC:DD:EE:FF

{d}: Representing a decimal number

{d1}: Representing an odd number

{d2}: Representing an even number

{h}: Hexadecimal

{h2}:Representing an Hexadecimal even number

{h1}:Representing an Hexadecimal odd number

{k}: Thirty-six hexadecimal

{c}: Express an ASCII letter (a~z, A~Z)

The other character representation must be the same as that character.

“?”、“\”、“{”、“}” refer to “\?”、“\\”、“\{”、“\}”。

eg:

1.Regular expression: ??-??-??-??-??-??

OK: 00-00-00-00-00-00

11-re-66-∧-,L-l)

ERROR: 00-00-00-00-00:00

00-00-00-00-00-00**0**

2.Regular expression: ?\?-??-??-??-??-??

OK: 0?-00-00-00-00-00

1?-re-66-∧-,L-l)

ERROR: **00**-00-00-00-00-00

3.Regular expression: ??{h2}-??-??-??-??-??

OK: 02-00-00-00-00-00

1A-re-66-∧-,L-l)

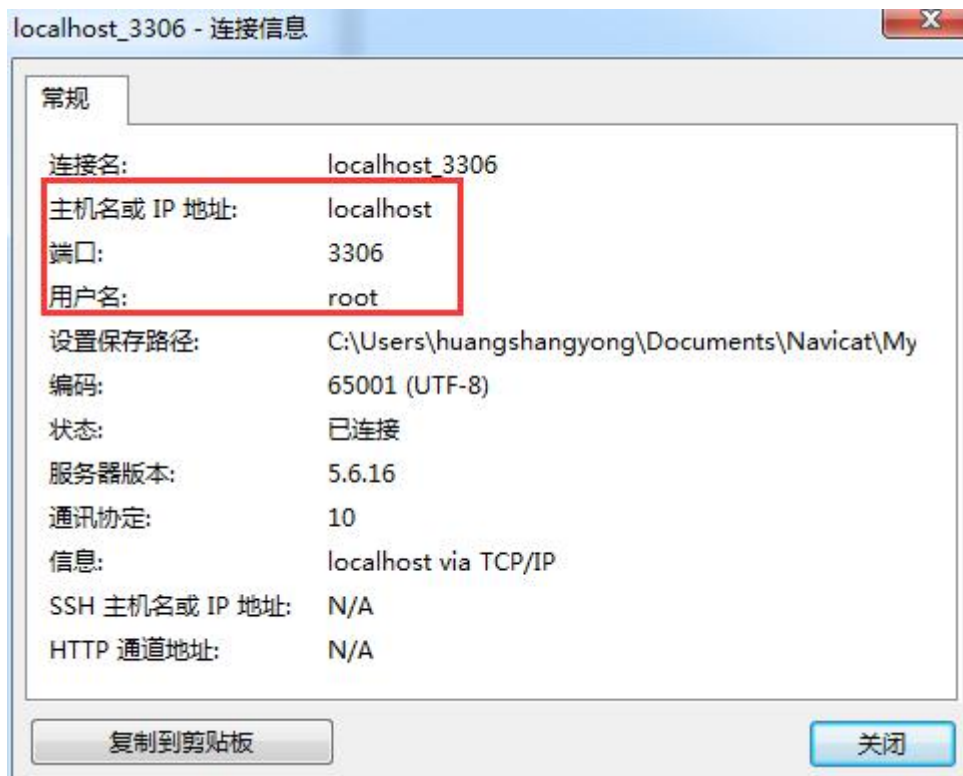
ERROR: **01**-00-00-00-00-00

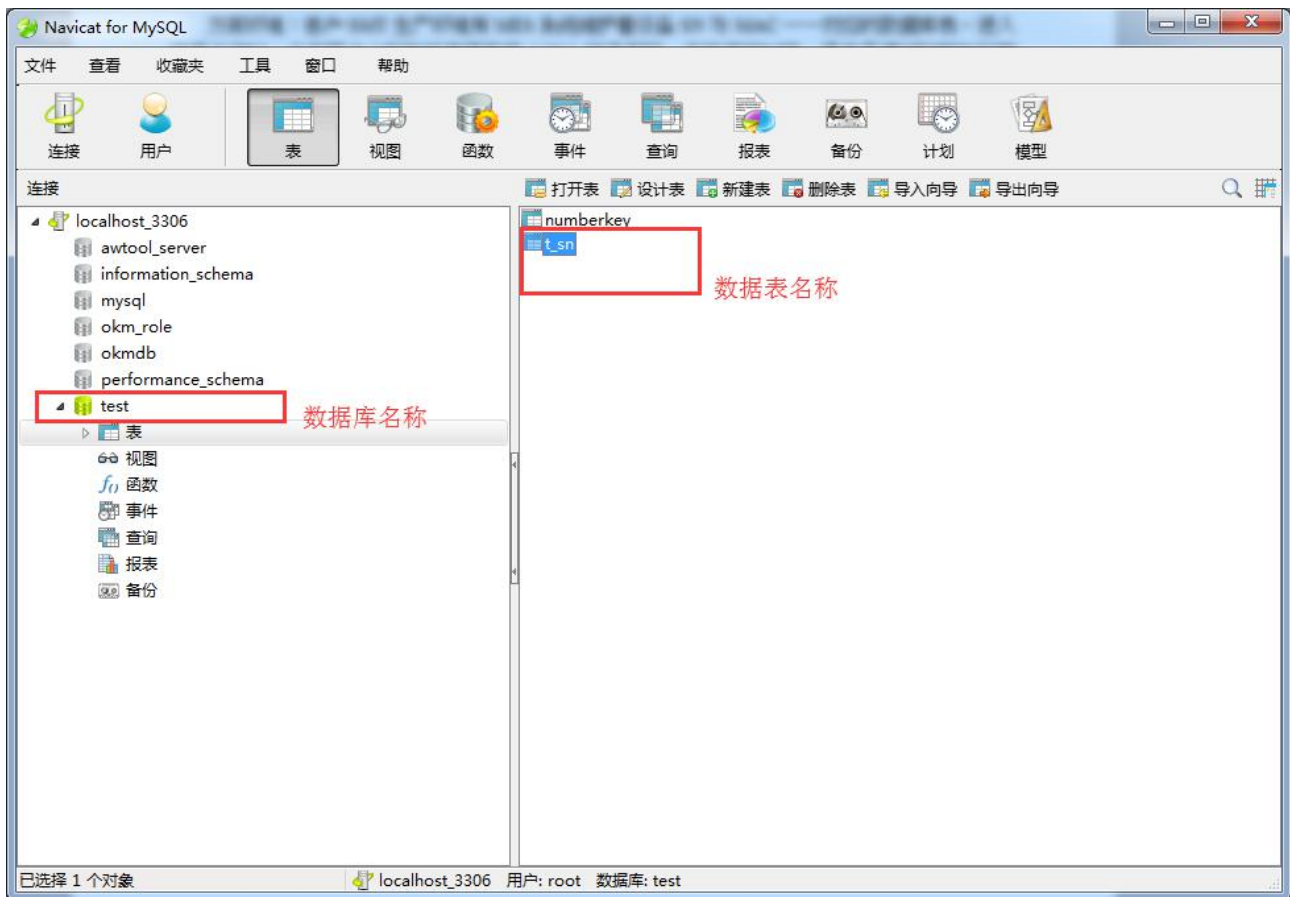
0z-00-00-00-00-00

Appendix2 Using database to write MAC address

Environment: the client SMT production environment has a MES system that maintains the corresponding database tables of SN and MAC. When entering the write number station, the bar code marked with serial number (SN) is attached on the board. When the operator has scanned the SN bar code by scanning gun, the tool automatically connects to the remote database to obtain the MAC address corresponding to the SN code and writes the SN and MAC to the board at the same time.

database: mysql



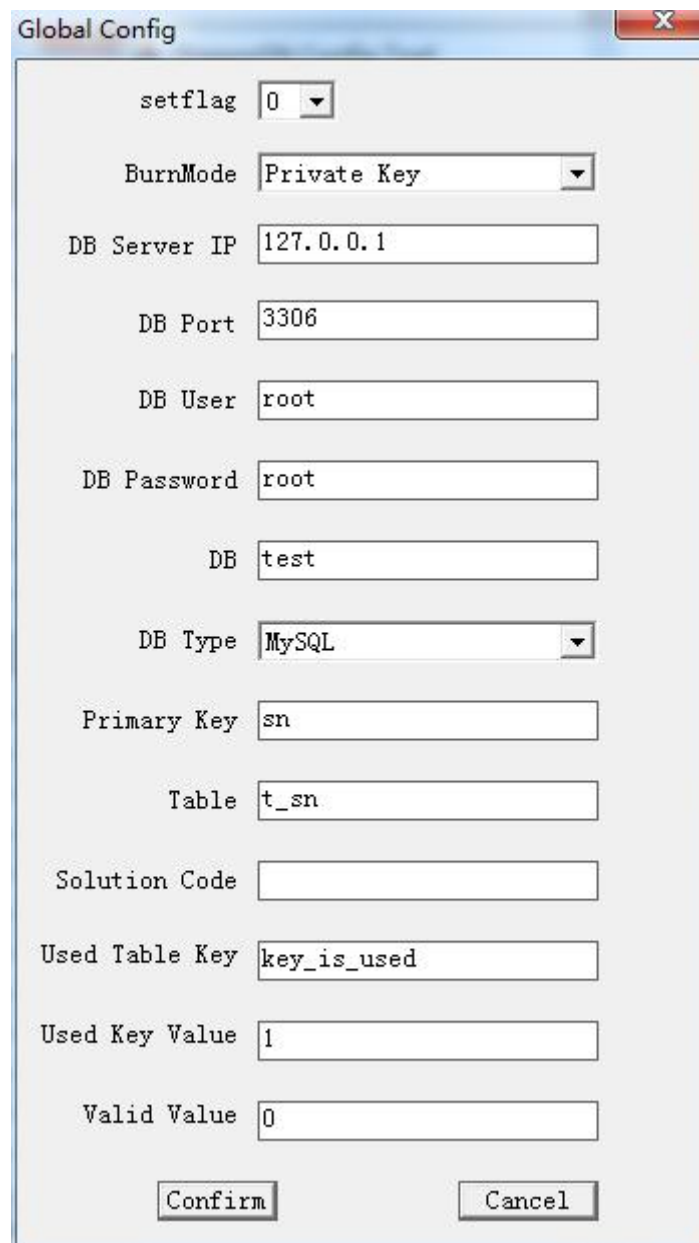


data struct

The screenshot shows the table structure view for the 't_sn' table. The table has three columns: 'sn', 'wifimac', and 'key_is_used'. The 'key_is_used' column is highlighted in blue. The table contains three rows of data: (1234, 112233445566, 0), (aaaa, 665544332211, 0), and a third row with a blue header row.

sn	wifimac	key_is_used
1234	112233445566	0
aaaa	665544332211	0

global config:



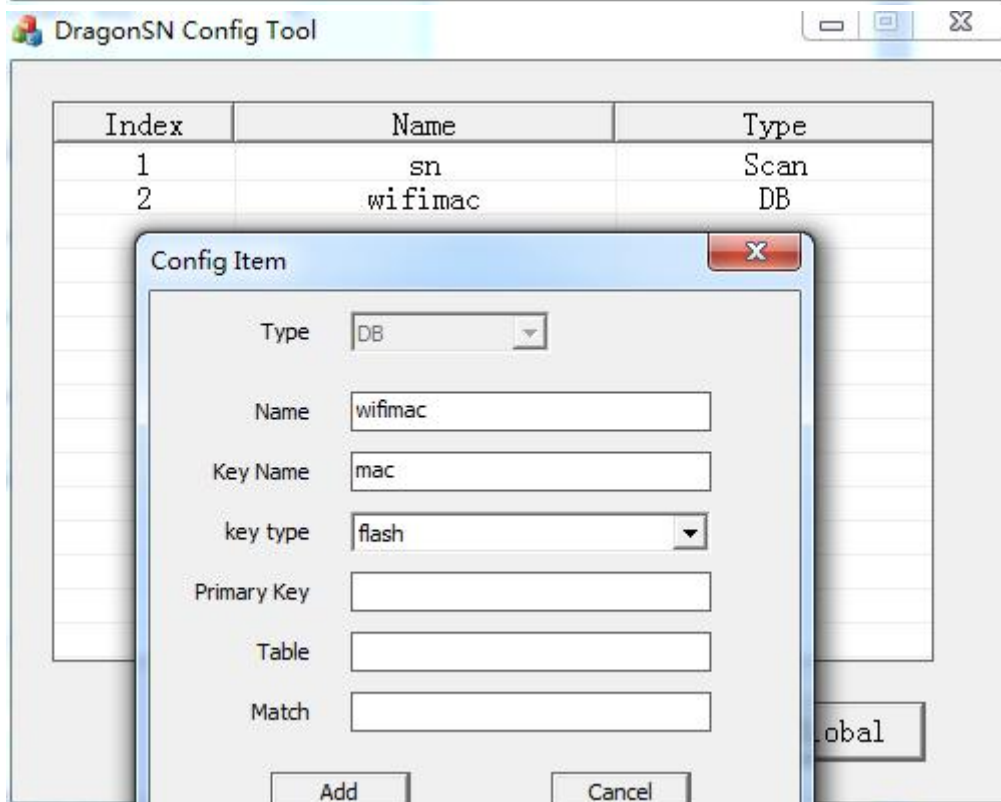
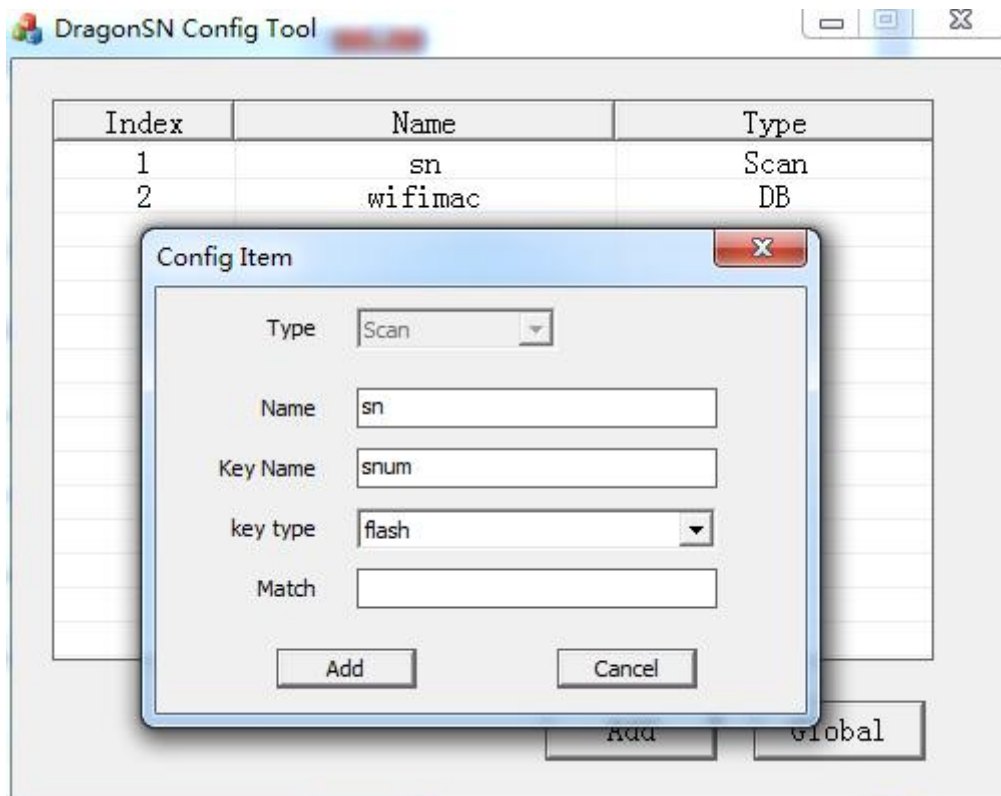
The image shows a 'Global Config' dialog box with the following fields and values:

Field	Value
setflag	0
BurnMode	Private Key
DB Server IP	127.0.0.1
DB Port	3306
DB User	root
DB Password	root
DB	test
DB Type	MySQL
Primary Key	sn
Table	t_sn
Solution Code	
Used Table Key	key_is_used
Used Key Value	1
Valid Value	0

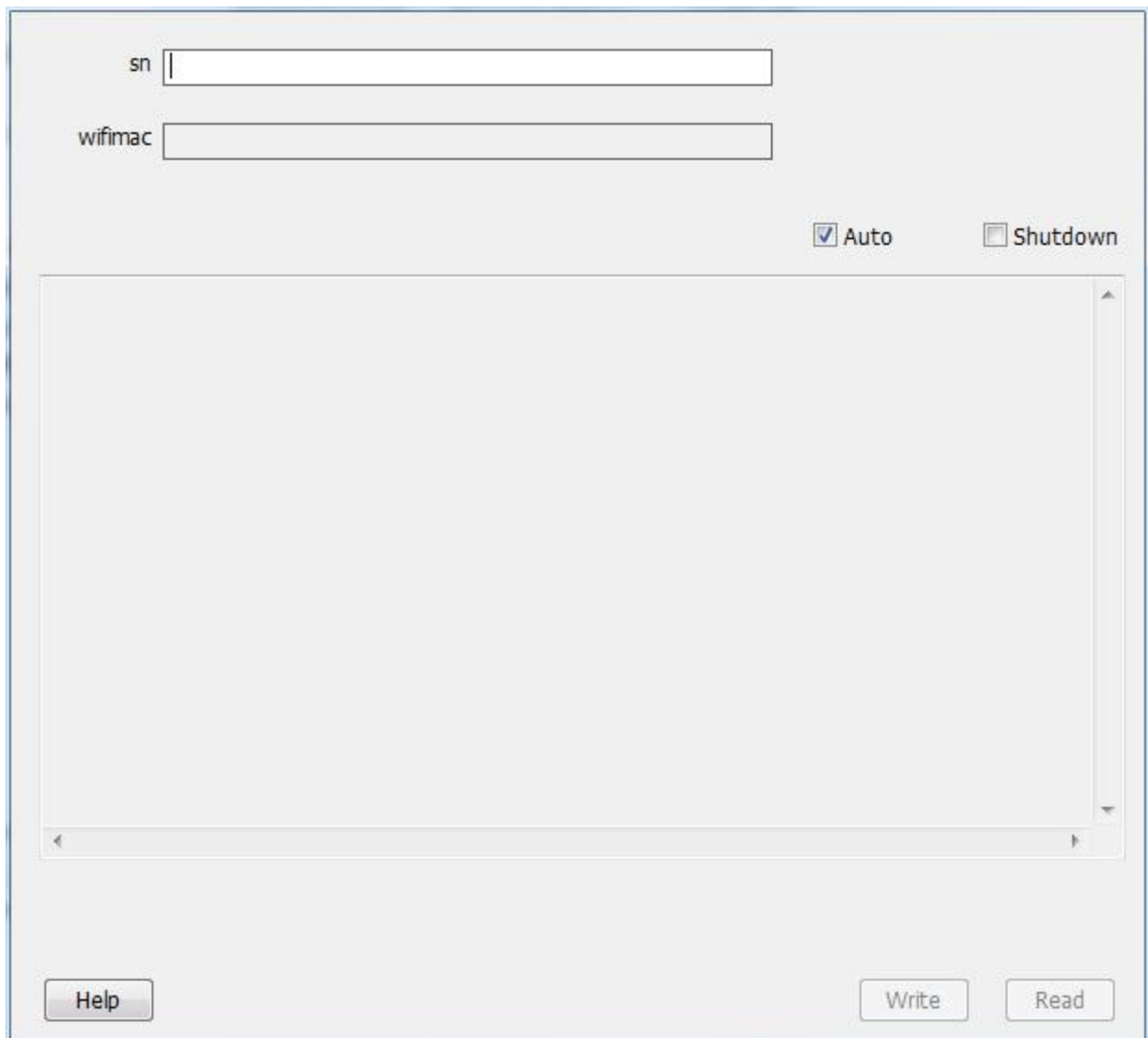
Buttons: Confirm, Cancel

Note: the case contains the table key, so the configuration uses the "Used Table Key", "Used Key Value", "Valid Value" three configuration, if not in your solution, leave it empty.

Key config:



After config, run DragonSN:



The image shows the DragonSN software interface. It features two input fields at the top: 'sn' and 'wifimac'. To the right of these fields are two checkboxes: 'Auto' (checked) and 'Shutdown' (unchecked). Below these is a large, empty text area with a vertical scrollbar on the right and a horizontal scrollbar at the bottom. At the bottom of the window, there are three buttons: 'Help' on the left, and 'Write' and 'Read' on the right.

Scanned the SN bar code by scanning gun

sn

wifimac

665544332211

☒ Auto

☐ Shutdown

Device online
snum = aaaa
mac = 665544332211
Writing key to device...
Write finish.
Device plugout

Write finish.

Help

Write

Read