

# **Q-Fan**

## **LED Fan Programmer**

# **User Manual**

## Version 1.7 Feb. 24, 2023

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#### 1 Introduction

*Q-Fan* is Nyquest's brand new integrated LED Fan display function tool for NY4, NY5, NY5+, NY8 and NX1 series. The mainly purpose is to bring more convenience for customers developing their own product.

#### 1.1 What is Q-Fan

*Q-Fan* is an integrated fan display function tool which allows user to conveniently edit pictures and actions through simple graphical interface. It also provides import and export function of pictures, that would make product development process more efficiency. The built .bin file after compiled can be written to the demo board directly for making a demonstration.

#### 1.2 Getting Started

Please contact Nyquest Technology to acquire the latest *Q-Fan* program. To install *Q-Fan*, unzip the .zip file to a specific folder and then double-click on the .exe file in the folder to start the installation. Follow the instructions of the installation wizard to complete the installation.

#### System Requirements:

- A PC compiled with Pentium 1.3KHz or higher CPU, Windows 7/ 8/ 10.
- At least 1G SDRAM.
- At least 2G hardware space.
- A display card and monitor that support 1366x768 resolution or higher.
- NET Framework 4.0 installed.

#### 1.3 Process flow



Extension	Description		
.qfp	Q-Fan project file.		
.fas	Import and export picture file.		
.bin	A target binary file.		
.htm	Checking list file.		

**Q-Fan File Format** 



2 The Main Interface of Q-Fan



#### 2.1 Menu

The function menu contains: File, View, Compile, Tool, and Help.

#### 2.1.1 File

Click on the header [File] on the menu bar and the menu is shown below:



New: Create a new Q-Fan file.

**Open**: Open a *Q-Fan* file.

Save: Save current Q-Fan file.

Save As: Save a *Q-Fan* file as another name or to another path.

Export: Export .qfp file and the edited files to specified directory.

Import Sentence: Import the sentences from .csv file.

Export Sentence: Export the sentences of current project as .csv file.

Recent Files: Open a recently accessed Q-Fan file.

Exit: Exit Q-Fan.

#### 2.1.2 View

Click on the header [View] on the menu bar and the menu is shown below:

View

Default Layout

Default Layout: Restore the default layout configuration.

#### 2.1.3 Compile

Click on the header [Compile] on the menu bar and the menu is shown below:



Build: This feature is for compiling current Q-Fan file into binary file.



#### 2.1.4 Tool

Click on the header [Tool] on the menu bar and the menu is shown below:

Тоо	L.	
۷	Q-Writer	F9

**Q-Writer**: Q-Writer is the software which enables user to download .bin file to the Flash Demo Board for verification.

#### 2.1.5 Help

Click on the header [Help] on the menu bar and the menu is shown below:

Help	
History	
Check for Updates	•
About Q-Fan	F1

Language: Switch the language of Q-Fan.

History: See the revision history of Q-Fan.

**Check for Updates..**: Check whether there is the latest *Q-Fan, NYASM* version, this feature must be connected to the network.

About Q-Fan: Show current Q-Fan version and the contact information for technical support.

#### 2.2 Project Setting

The panel is designed for all project setting, when create a new *Q-Fan* file, system has specific default values, but user can modify it according to actual demand.

#### 2.2.1 Option

Option	
Client Name	Nyquest
IC Body	NX13P64A
Power On Delay	5 🗘 sec
Oscillator	32 • MHz
Resolution	100 -
Voltage	4.5 ▼ V
Image Type	Circle •
LVR	2.6V •

#### 2.2.1.1 Client Name

The name of user or company is shown here. The compilation will not be completed without filling out client name. (This is for the protection of copyright of the programmer)

#### 2.2.1.2 IC Body

The IC body is selected here. By left-clicking on ..., window of setting will show up for selection, user can click "OK" for setting.

🛃 IC Body Option						
NY4 Series NY5 Series	NY5+ Series NY8 S	eries NX1 OTP Series	NX1 EF Series			
IC	Program ROM	Data ROM	Reserved ROM	I/O	Large PWM	Open Drain
NY5Q020A	48K x 10	48K x 10	0x001F0x07FF	8	0	0
NY5Q040A	64K x 10	96K x 10	0x001F0x07FF	8	0	0
NY5Q060A	64K x 10	144K x 10	0x001F0x07FF	16	0	0
NY5Q092A	64K x 10	224K x 10	0x001F0x07FF	16	0	0
NY5Q172A	64K x 10	416K x 10	0x001F0x07FF			0
NY5Q342A	64K x 10	832K x 10	0x001F0x07FF	20	0	0
	· · · · · · · · · · · · · · · · · · ·					

#### 2.2.1.3 Power On Delay

Set the delay time after power on. It allows that motor rotational speed reaches a certain speed then starts acting. The time range is from 1 to 8 seconds.

#### 2.2.1.4 Oscillator

Set the oscillator of IC body. In NY5 / NY5+ series, user can select 1MHz or 2MHz with 128 resolutions, but the oscillator is fixed as 2MHz with 256 resolutions. NY4 series is fixed as 1MHz. NY8 series is fixed as 20MHz / 4T.

#### 2.2.1.5 Resolution

User can choose 128 or 256 as picture Resolution, i.e. how many LED points can be displayed in a circle. Resolution is a measure of the clarity of a picture. Higher Resolution offers better picture performance and Resolution is relative to IC Oscillator.

Note: The resolution of NY4 series is fixed as 128, NX1 series is fixed as 100.

#### 2.2.1.6 Voltage

Set the operating voltage of IC. NY4 / NY5 / NY5+ can select 3.0V or 4.5V, NY8 is fixed as 5.0V, NX1 is fixed as 4.5V.

#### 2.2.1.7 Image Type

Set the display mode of the picture, you can choose Circle and Rectangle.

#### 2.2.1.8 LVR

Threshold of LVR Voltage.

Note: Only NX1 OTP supports this setting.

#### 2.2.2 LED

LED	
Mode	Addressable RGB 🔻
Brightness	100 🗘 %
RGB Type	R-G-B 🔻
LED Data 0	T0H:300ns T0L:900ns
LED Data 1	T1H:900ns T1L:300ns

#### 2.2.2.1 Mode

Set the current project as the Mono, RGB, or Addressable RGB mode. The supported modes are

various for the different IC series as shown below.

IC Series	Mono	RGB	Addressable RGB
NY4	v	-	-
NY5	V	-	-
NY5+	V	V	-
NY8	V	-	-
NX1 OTP	-	-	V
NX1 EF	-	-	V

#### 2.2.2.2 Brightness

Set the brightness of the LED.

Note: Only NX1 supports this setting.

#### 2.2.2.3 RGB Type

Set the type of LED.

Note: Only NX1 supports this setting.

#### 2.2.2.4 LED Data 0

Set the type of LED.

Note: Only NX1 supports this setting.

#### 2.2.2.5 LED Data 1

Set the type of LED.

Note: Only NX1 supports this setting.

#### 2.2.3 I/O Pin

I/O Pin		
LED Count	12	LED Mapping

#### 2.2.3.1 LED Count

Set the LED count. The minimum is one, and the maximum is determined by the IC Body settings. Since one I/O pin has to be set as Motor Detect Pin, the maximum LED count is shown below.

IC Series	I/O	Single Color	Multicolor
NY4B	8	7	-
NY5A	8	7	-
NY5B	15	14	-

NY5C	20	19	-
NY5C	24	23	-
NY5+	8	7	2
NY5+	16	15	5
NY5+	20	19	6
NY8A053D/E	12	11	-
NY8A054D/E	14	13	-
NX12/13PxxA	32	-	16
NX12/13MxxA	16	-	12
NX13FSxxA	25	-	8
NX13FMxxA	21	-	8

#### 2.2.3.2 LED Mapping

Set the corresponding I/O pin by needs, the I/O pins include the motor detect pin which makes the PCB layout be performed more flexibly. The LED close to center is number one, and the LED number is getting bigger toward the rim (LED [In -> Out]).

User can choose the corresponding count for LED Count in drop-down list.

LED Count	12 🔻	
	1	
	2	
	3	
	4	
	5	

Rearrange LED and Detect Pins using LED Order.

LED Order	
Reorder	Default
Count : 12/12	

**Reoreder** : Arrange the Detect Pin and LED in sequence according to the position where the mouse left-clicking.

**Default** : Arrange the Detect Pin and LED in the order of the Pins.

1 LED occupies 1 pins use drag to set the corresponding pins of the LED / Detect pin.



1 LED occupies 3 pins use the drop-down list to set the corresponding pin of the LED pin



2 LED occupies 1 pins use drag to set the corresponding pins of the LED pin.



I/O pins for all series are shown below.

NY4B/NY5A (8 I/O)			
PA0	PA1	PA2	PA3
PB0	PB1	PB2	PB3
	NY5B	(15 I/O)	
PA0	PA1	PA2	PA3
PB0	PB1	PB2	PB3
PC0	PC1	PC2	PC3
PD0	PD1	PD2	-
NY5C (20 I/O)			
PA0	PA1	PA2	PA3
PB0	PB1	PB2	PB3

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PC0	PC1	PC2	PC3
PD0	PD1	PD2	PD3
PE0	PE1	PE2	PE3
	NY5C	(24 I/O)	
PA0	PA1	PA2	PA3
PB0	PB1	PB2	PB3
PC0	PC1	PC2	PC3
PD0	PD1	PD2	PD3
PE0	PE1	PE2	PE3
PF0	PF1	PF2	PF3
	NY5+(	(8 I/O)	
PA0	PA1	PA2	PA3
PB0	PB1	PB2	PB3
	NY5+(	16 I/O)	
PA0	PA1	PA2	PA3
PB0	PB1	PB2	PB3
PC0	PC1	PC2	PC3
PD0	PD1	PD2	PD3
	NY5+(	20 I/O)	
PA0	PA1	PA2	PA3
PB0	PB1	PB2	PB3
PC0	PC1	PC2	PC3
PD0	PD1	PD2	PD3
PE0	PE1	PE2	PE3
	NY8A053E	D/E (12 I/O)	
PA0	PA1	PA2	PA3
PB0	PB1	PB2	PB3
PB4	PB5	PB6	PB7
	NY8A054E	D/E (14 I/O)	
PA0	PA1	PA2	PA3
PA4	PA5	PA6	PA7
PB0	PB1	PB2	PB3
PB4	PB5	-	-
	NYX12/13P	xxA (32 I/O)	
PA0	PA1	PA2	PA3
PA4	PA5	PA6	PA7
Only the I/O listed above can be used for LED, Detect Pin is not restricted			
PA8	PA9	PA10	PA11
PA12	PA13	PA14	PA15
PB0	PB1	PB2	PB3
PB4	PB5	PB6	PB7
PB8	PB9	PB10	PB11
PB12	PB13	PB14	PB15
NX12/13MxxA (16 I/O)			
PA2	PA3	PA4	PA5
PA6	PA7	-	-

Only the I/O listed above can be used for LED, Detect Pin is not restricted			
PA8 PA9 PA10		PA11	
PA12	PA13	PA14	PA15
PB6	PB7	-	-
	NX13FSxx	A (25 I/O)	
PA4	PA5	PA6	PA7
Only the I/O listed above can be used for LED, Dectect Pinis fixed to PA15, PA3 and PA14 must be connected.			
NX13FMxxA(21 I/O)			
PA4	PA5	PA6	PA7
Only the I/O listed above can be used for LED, Dectect Pinis fixed to PA15, PA3 and PA14 must be connected.			

Note: If the I/O pin is selected repeatedly, there will be error notice when user compiles file.

#### 2.2.4 Motor Direction

Motor Direction		
Clockwise		
Ounterclockwise		

The Motor Direction function is used for setting the motor rotary direction to be clockwise or counterclockwise. User must set direction according to actual motor application circuit.

# Note: When setting direction is not identical to actual motor direction, it may cause the LED display direction disordered.

#### 2.2.5 Radius

Radius		
Inside (mm)	50	
Width (mm)	10	
Spacing (mm)	0	

The Radius function sets the relevant parameters that are used to adjust the arrangement of LED space. It only changes the Picture Editing Panel on the display and shows the vivid visual effect.

#### Note: The setting will not affect the actual display.

Relevant parameters are shown below.

ltem	Description
Inside	The radius of the inner LED round, the unit of its length is millimeter (mm).
Width	The width of the LED, the unit of its length is millimeter (mm).
Spacing	The spacing between each LED, the unit of its length is millimeter (mm).



#### 2.2.6 IR RX

IR RX		
🔲 Enabled		
Bit	4 •	
CRC (Bits)	No 🔹	
Pin	PA1 •	

The infrared receiver can set a single pin to receive IR signals from exterior then trigger different sentences by the signals.

The descriptions of functions are as follows.

Item	Description
Bit (IR data length)	Set the length of IR encoded data.
IR CRC(Cyclic Redundancy Check)	Set the bit length of IR CRC, the default is "No"
Pin (IR receiver pin)	Set the IR receiver pin.

#### *Note: Only NY4 / NY5 / NY5+ / NX1 support this setting.*

#### 2.2.7 Custom Power On File

Custom Power On File	
🔽 Enabled	

The user can add a customized .asm file and execute it in the Power On path. The program will start playing graphics after the content of the .asm has been executed.

*Note: Only NY5 / NY5+ support this setting.* 

#### 2.3 Picture List

The list of all pictures of current project, each picture is displayed as a thumbnail. Select any of the pictures, and the content will be loaded into Picture Editing Panel.

Function of toolbar is shown below:

Add: Create a blank picture.
Remove: Delete the selected picture.
Import: Import an existed picture.
Export: Export the selected picture as a new file.
Import Vixen: Import an existed Vixen file.
Remove All: Clear all pictures.
Move Up: Move up the selected picture.
Move Down: Move down the selected picture.

Context menu is shown when right-clicking.





е

#### 2.4 Picture Editor



#### ♦ Toolbar

Shift Up: Move the graph counterclockwise. The graphic in the Square Editing Zone will move to the left.Shift Down: Move the graph clockwise. The graphic in the Square Editing Zone will move to the right.Pen: Fill up to color the mouse click block of graphic.

**Pen Bucket:** Fill up to color the mouse click zone of graphic.

Pipette: Choose the color of the mouse click block of graphic.

**Color:** Choose the color. User can set 8 colors, 26 colors or full colors according to the different resolutions and chip.

Undo: Recover the previous step during editing.

Redo: Cancel the previous Undo action during editing.

Import Text: Open Import Text window .

Import Image: Import the graphic file that supports the following file types: .bmp, .ico, .jpg, and .png.

Zoom In: Enlarge the grids for editing easily.

**Zoom Out:** Narrow the grids to expand the visible region.

#### Circle Editing Zone

The zone provides a convenient way for editing graphic with drawing tools. A block of each LED is representative of the rotated position. User can edit these LED blocks with left-click mouse, or press and drag to color the region continuously. Each LED is showed as a colored block independently. User can right-click mouse to cancel the colored blocks, or press and drag right mouse to cancel the colored block continuously. User have to set the starting point according to the motor detect position.



When drag to Starting Point and see  $\sqrt{\frac{h}{2}}$ , user can rotate the picture by left-click and dragging mouse. When drag to Starting Point and see  $\sqrt{\frac{h}{2}}$ , user can change starting position by right-click and dragging mouse.

# Note: Be careful to use Fill or Clear function because Picture Editing Panel doesn't have undo function at the current version.

#### ◆ Rectangle Editing Zone

The zone provides a convenient way for editing graphic with drawing tools. A block of each LED is representative of the position of rotation. User can edit these LED blocks with the mouse to left-click, or press and drag to color the region dynamically. Each LED is showed as a colored block independently. User can right click mouse to cancel the colored blocks, or press and drag right mouse to cancel the colored blocks with the mouse to left-click, or press and drag to color the region dynamically. User continuously. User can edit these LED blocks with the mouse to left-click, or press and drag to color the region continuously.



#### 2.4.1 Import Text

User can design picture by using Text editor which is a tool for simply converting text into a picture. It contains: Text Editing Zone, Picture Information Setting Zone, and Picture Preview Zone.





#### Rectangle

✓ Import Text	Location Vertical Horizontal Janore Background Picture Information Setting Zone
Nyquest Text Editing Zone	
Nyque	Picture Preview Zone
	OK <u>Cancel</u>

#### 2.4.1.1 Text Editing Zone

User can enter text in Text Editing Zone and set the font, font size, italics, and bold. After setting, User can preview the converted picture in Picture Preview Zone.



#### 2.4.1.2 Picture Information Setting Zone

Location	
Horizontal	
Ignore Bac	kground

**Vertical:** Move the graph vertically.

Horizontal: Move the graph horizontally.

**Ignore Background:** Ignore the background pattern.

#### 2.4.1.3 Picture Preview Zone

User can preview the converted picture here. Circle



Rectangle





#### 2.4.2 Import Image

User can convert picture into graphic data. First open the original image file, then adjusts the color, position, size and other parameters, draws the original image file to the conversion zone, and finally converts it into graphic data. The conversion effect will produce a certain degree of distortion due to the relationship between the resolution and the number of LEDs. To achieve a better conversion effect, in addition to the original image file as simple as possible, it is also necessary to use a higher resolution and increase the number of LEDs.



Image: Original image.

**Color:** Select the color scale for conversion.

Threshold: Select the contrast of the conversion. Only Mono supports this function.

Width: Set the width of image.

Height: Set the height of image.

Horizontal: Set the horizontal position of image.

Vertical: Set the vertical position of image.

Picture Editor: User can edit the converted picture.

#### 2.5 Action Table

The Sentences editor provides the action list composed by pictures and corresponding actions. User can edit the action list by clicking columns. Only pictures used in sentences will occupy IC ROM size.

Sentence 1	Contraction Contra	<b>tence</b> Duration Invert	► ★       P0002       Rotational       1 \$ Sec.
	2	Picture Effect Duration Invert	P0003         ▼           Delay         ▼           1 \$ Sec.           Step
	3	Picture Effect Duration Invert	P0004     ▼       Twinkle     ↓       1 \$ Sec.
POP Sentence	Sentend	:e 1 🔻	Loop Step Count: 3

#### 2.5.1 Sentence

The Sentence column shows the sentence numbers the steps belong to. Every sentence, which may contain several steps, can specify which picture to display. Users can add or delete Sentence from the toolbar, or use the right-click menu to edit.



#### 2.5.2 Step

2.5.2.1	Picture	Setting
---------	---------	---------

	Picture	P0001 •
1	Effect	Static •
T	Duration	1 🗘 Sec.
	Invert	

Picture: User can select serial numbers of the picture optionally. Selecting the serial number of the

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picture will show the settings in the above figure

Effect: User can set the effects of sentences by selecting effects of static, twinkle, rotational, flowing,

circle stepping and delay. Click the button ... to show setting window.

Duration: User can set Duration which means how long the action will last

Invert: User can set the action inverting-displayed via the Invert column.

#### 2.5.2.2 Vixen Setting

1	Picture Effect Duration	P0001         ▼           Static (Vixen)         0.03 \$ Set	) ec / Per Pic
	Count Total Duration	189 4.725	Sec.

**Picture**: User can select serial numbers of the picture optionally. Selecting the serial number of the Vixen will show the settings in the above figure

Effect: Every image in Vixen can only use static effect.

Duration: User can set Duration of every image in Vixen.

Count: Number of images in Vixen.

Total Duration: The total duration of the Vixen.

#### 2.5.2.3 Static

The action shows picture as static appearance. User can set Duration which means how long the action will last. The range of Duration is shown below.

Resolution	Duration (Sec)
128	0.1 ~ 120
256	0.1 ~ 240
100 (NX1 Series)	0.1 ~ 60

#### 2.5.2.4 Delay

The action shows a blank picture. User can set Duration. The range of Duration is shown below.

Resolution	Duration (Sec)
128	0.1 ~ 120
256	0.1 ~ 240
100 (NX1 Series)	0.1 ~ 60

Note: Inserting Delay between two actions, it will display a blank picture until the duration of Delay ends then continue to the next action.

#### 2.5.2.5 Twinkle

The action shows picture dynamically as flashing appearance. For setting, user can set Duration and Frequency. The ranges of Duration and Frequency are shown below.

Resolution	Duration (Sec)	Frequency (Hz)
128	0.1 ~ 120	0.1 ~ 15
256	0.1 ~ 240	0.1 ~ 30
100 (NX1 Series)	0.1 ~ 60	0.1 ~ 15

🛃 Twinkle	×
Duration	1 🗘 Sec.
Frequency	4 🗘 Hz
ОК	Cancel

#### Ex.

Duration = 4 sec

Frequency = 2 Hz

The picture flashes two times one second. The picture becomes bright and dark every 0.5 sec, and the action will last for 4 seconds. Thus, it totally flashes 8 times.

#### 2.5.2.6 Rotational

The action shows picture dynamically as gradual appearance or disappearance. In this menu, user can set Duration and Speed. The ranges of Duration and Speed are shown below.

Resolution	Duration (Sec)	Speed (R/S)
128	0.1 ~ 120	0.01 ~ 25
256	0.1 ~ 240	0.01 ~ 25
100 (NX1 Series)	0.1 ~ 60	0.01 ~ 25

 Duration
 1 ◆ Sec.

 Speed
 4 ◆ R/S

 Direction
 Image: Clockwise

 Counterclockwise
 Counterclockwise

 Rotational Effect
 Image: Rotary & Disappearing

 Rotary & Disappearing
 Static & Disappearing

 Static & Disappearing
 Static & Appearing

 Static & Appearing
 Rotary

 OK
 Cancel

x

🔆 Rotational

Direction is the rotary direction of picture. It ca	an be set in Clockwise
---	------------------------

or Counterclockwise.

Rotational Effect is shown below.

<b>Rotational Effect</b>	Description
Rotary & Disappearing	The picture rotates to the starting position and then gradually disappears. (Usually cooperate with the previous picture.)
Rotary & Appearing	The picture rotates from starting position and then gradually appears. (The direction for English words should be counterclockwise)
Static & Disappearing	The picture stays static and then gradually disappears from the starting position. (Usually cooperate with the previous picture.)
Static & Appearing	The picture stays static and then gradually appears from the starting position. (The direction for English words should be clockwise)
Rotary	The picture rotates from starting position. (According to the direction setting)

#### Note: Please refer to <u>Appendix 4.1</u> for the detail setting of Duration and Speed.

#### 2.5.2.7 Flowing

The action shows picture dynamically as gradual appearance or disappearance to cover the previous picture. In this menu, user can set Duration and Speed. The ranges of Duration and Speed are shown below.

Resolution	Duration (Sec)	Speed (R/S)
128	0.1 ~ 120	0.01 ~ 25
256	0.1 ~ 240	0.01 ~ 25
100 (NX1 Series)	0.1 ~ 60	0.01 ~ 25

😸 Flowing	×			
Duration	1 🗘 Sec.			
Speed	4 🗘 R/S			
Direction				
Clockwise				
Counterclockwise				
Rotational Effect				
Static & Appearing / Static				
Rotary & Appearing / Static				
© Static & Appearing / Rotary				
Rotary & Appearing / Rotary				
ОК	Cancel			

Direction is the rotary direction of picture. It can be set in

Clockwise or Counterclockwise.

#### Flowing Effect is shown below.

Flowing Effect	Description
Static & Appearing / Static	The picture gradually appears from starting position and stays static, meanwhile, the previous picture is gradually covered.
Rotary & Appearing / Static	The picture rotates from starting position and then gradually appears, meanwhile, the previous picture is gradually covered.
Static & Appearing / Rotary	The picture gradually appears from starting position and stays static, meanwhile, the previous picture rotates to the starting position and gradually disappears.
Rotary & Appearing / Rotary	The picture rotates from starting position and then gradually appears, meanwhile, the previous picture rotates to the starting position and gradually disappears.

#### Note: Please refer to <u>Appendix 4.1</u> for the detail setting of Duration and Speed.

#### 2.5.2.8 Circle Stepping

The action shows picture dynamically as stepping appearance or disappearance of different circle of LED. In this menu, user can set Step Duration and Step. The ranges of Step and Step Duration are shown below.

Step	Step Duration (Sec)	
1 ~ 256	0.1 ~ 20	

Total Duration = Step Duration x Step.

In the left of Step table, it indicates the position of LEDs. In the above, the stepping sequence is

indicated. User can edit these LED blocks with the mouse to left-click, or click and drag the region. Each LED is showed as a colored block independently. To cancel the selection, left click or drag the



colored block with the mouse. In this way user can make LEDs appeared or disappeared gradually from inside to outside or from outside to inside.

As shown above, the 1st step lights up all LEDs, the 2nd step turns off LED1, the 3rd step turns off LED1 and LED2 until the 12th step only remains LED12 is still on. All pictures will gradually disappear in 20 seconds from inside to outside.

#### 2.5.3 Loop

User can set the action displayed in loop or not via the Loop column, but it's only applied to the last action of sentence.

#### 2.5.4 POP Sentence

The settings of POP Sentence will decide to trigger the action of Power-On-Play. When user selects "Enable" and IC is powered on, IC will play the edited POP Sentence.

#### 2.6 Status Bar

Status bar shows current project information, including Time and ROM size.

Total Time: The duration time of all actions.

Total Time : 11.0 sec

#### Note: Please refer to

Total Memory Size: The size is the used Memory space after compiled.



Total SPI Flash Size: The size is the used SPI Flash space after compiled, the unit is Bytes.

Total SPI Flash Size : 8817 bytes

#### 3 How to Release Code

After finishing a *Q-Fan* project, please follow the instructions in this chapter to release the code.

#### 3.1 Saving the Project

By selecting [Save] from the [File] menu or by clicking the [Save] button on the toolbar, the current *Q-Fan* project will be saved. Choose [Save As...] if in need of saving the project with a different name and/or to a different location. Names of *Q-Fan* project files will have the **.qfp** extension.

Note: Due to Q-Fan does not provide the auto-save function, please save the undone project frequently in order to avoid unexpected Windows system crash or power failure causing data missing.

#### 3.2 Building up the .bin File

By selecting [Build] from the [Compile] menu or by clicking the [Build] button on the toolbar, the compiling process will start. *Q-Fan* will check all the settings and options first. If there are no errors, the target file (.bin) and checking list file (.htm) will be generated. These two files will be put in the same folder as the project file (.qfp) folder. If the compiling is successfully completed, a dialog box that says "Build success" will pop up. (See the right figure)



#### 3.3 Demonstration

To make a demonstration, please write the target file (.bin) into NY4\_FDB demo board or NY5\_FDB demo board by Nyquest *FDB\_Writer* with *Q\_Writer* provided by Nyquest. To launch *Q-Writer* software, User can simply select [Q-Writer] from the [Tools] menu.





#### 3.4 New Code Release Flow

When the client approves of the project, a target file (.bin) and checking list (.htm) will be generated after *Q-Fan* finishing the compiling process. Please send the .bin file to Nyquest or Nyquest's agent. As Nyquest receives the file, Nyquest would offer a confirm sheet to the client for double checking, for example, a confirm sheet named "NX13P64A-XXXX.htm" (XXXX is the code numbers provided by Nyquest). After a careful and thorough review, please send the confirm sheet with signatures via fax machine along with official PO to Nyquest. Nyquest will start IC mask production immediately. All our clients need to do is wait for our delivery and enjoy success. The complete flowchart is shown below:



#### 4 Appendix

#### 4.1 Speed Table of Rotational and Flowing

When setting Speed parameter of Rotational and Flowing mode, the difference between actual motor speed and program default speed may lead to display deviation. If actual rotational motor speed is lower than default rotational speed, picture refresh speed will be slightly slower than the setting and will lead to a slower display. If actual motor rotational speed is higher than default rotational speed, picture refresh speed will be slightly faster than the setting and will lead to a faster display. Therefore the setting Duration will be different from the actual required duration that completes all the dynamic effects.

Resolution = 128			
	Duration (S)		
Speed (K/S)	RPM = 3000	RPM = 3500 (Default)	RPM = 4000
0.0100	116.1	99.5	87.1
0.0110	105.8	90.7	79.3
0.0125	92.9	79.6	69.7
0.0141	82.6	70.8	61.9
0.0167	69.7	59.7	52.2
0.0196	59.3	50.9	44.5
0.025	46.4	39.8	34.8
0.028	41.3	35.4	31.0
0.032	36.1	31.0	27.1
0.041	28.4	24.3	21.3
0.050	23.2	19.9	17.4
0.064	18.1	15.5	13.5
0.09	12.9	11.1	9.7
0.11	10.3	8.8	7.7
0.15	7.7	6.6	5.8
0.22	5.2	4.4	3.9
0.45	2.6	2.2	1.9
0.89	1.3	1.1	1.0
1.3	0.9	0.7	0.6
1.7	0.7	0.6	0.5
2.6	0.4	0.4	0.3
3.4	0.3	0.3	0.3
4.8	0.2	0.2	0.2
9.7	0.1	0.1	0.1

#### Note: The default motor rotational speed is 3500 RPM.

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Resolution = 256				
Speed (D/S)	Duration (S)			
Speed (R/S)	RPM = 3000	RPM = 3500 (Default)	RPM = 4000	
0.0103	113.1	96.9	84.8	
0.0113	102.8	88.1	77.1	
0.0141	82.2	70.5	61.7	
0.0162	72.0	61.7	54.0	
0.020	56.5	48.5	42.4	
0.025	46.3	39.7	34.7	
0.028	41.1	35.2	30.8	
0.032	36.0	30.8 27.0		
0.037	30.8	26.4	23.1	
0.045	25.7	22.0	19.3	
0.056	20.6	17.6	15.4	
0.07	15.4	13.2	11.6	
0.1	10.3	8.8	7.7	
0.2	5.1	4.4	3.9	
0.4	2.6	2.2	1.9	
0.6	1.7	1.5	1.3	
0.8	1.3	1.1	1.0	
1.1	1.0	0.9	0.8	
1.3	0.9	0.7	0.6	
1.7	0.7	0.6	0.5	
2.0	0.6	0.5	0.4	
2.4	0.5	0.4	0.4	
3.2	0.4	0.3	0.3	
4.8	0.2	0.2	0.2	
9.7	0.1	0.1	0.1	

#### Ex.

For editing Speed parameter and setting Duration in Flowing.

- Conditions: Resolution = 128, RPM = 3500, Speed = 0.22 (R/S). According to these conditions, we can find Duration = 4.4 seconds in Table.
- a) Set Duration = 5.0 seconds, it means that action will show picture as static appearance for 0.6 seconds after picture has renewed.
- b) Set Duration = 3.0 seconds, it means that action will jump to next while picture is being renewed for 3.0 seconds.

## **Revision History**

Version	Date	Description	Modified Page
1.0	2010/12/08	1. The first version.	-
		1. Modify Power On Delay.	9
		2. Add Oscillator setting.	9
	3. Add Resolution setting.	9	
1 1	4.4 0044/02/07	4. Add Motor Detect Pin setting.	10
1.1	2011/03/07	5. Add Text editing function.	15
		6. Modify Rotational action setting.	18
		7. Modify Flowing action setting.	20
		8. Add Appendix 4.1 Speed Table of Rotational and Flowing.	25
		1. Update software interface.	-
1.2	2014/05/30	2. Add the RX function.	13
		3. Add the Sentences function.	17
		1. Update Help Menu.	8
		2. Add NY8 Series to IC Body.	10
	3. Update the description of Oscillator.	10	
1.3	1.3 2017/08/25	4. Update the description of Resolution.	10
	5. Add voltage description for NY8.	10	
		6. Update LED Count.	11
		7. Update I/O pins setting table.	12
		1. Add NY5+ Series to Introduction.	3
		2. Update the description of Getting Start.	3
		3. Update the description of Menu.	5
1.4	2021/11/30	4. Update the description of Project Setting.	7
		5. Update the description of Picture List.	13
		6. Update the description of Picture Editor.	14
		7. Update the description of Action Table.	19
		8. Update the description of Status Bar.	23
		9. Update the description of Building up the .bin File.	24

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		1. Update File.	5
		2. Update Option.	7
		3. Update IC Body.	7
		4. Update Oscillator.	8
		5. Update Resolution.	8
		6. Add Image Type.	8
		7. Add Brightness.	8
		8. Add RGB Type.	8
		9. Update LED Count.	9
1.5	2022/8/31	10. Update Pin Setting.	9
		11. Update Radius.	12
		12. Update IR RX.	12
		13. Update Picture List.	13
		14. Update Picture Editor.	14
		15. Update Import Text.	16
		16. Update Import Image.	18
		17. Update Action Table.	19
		18. Update Picture Setting.	19
		19. Update Vixen Setting.	20
		20. Update Status Bar.	23
		1. Uodate Compiler.	6
		2. Update Help.	7
		3. Add LVR.	9
		4. Update Pin Setting.	11
1.6	2022/11/28	5. Update Picture List.	16
		6. Add Picture Editor.	17
		7. Add Import Text.	19
		8. Add Import Image.	21
		9. Update Status Bar.	26
		1. Update Introduction.	4
1.7	2023/2/24	2. Update The Main Interface of Q-Fan.	5
		3. Update Comoiler.	6
		4. Update Option.	8
		5. Add LED.	9,10
		6. Update I/O Pin.	10