On-Wheel Lighting Imaging System

User Manual

WL-1501 (15”)

WL-1701 (17”)

[201010-01 Edition]

Preface:

Welcome to the fantastic world of Fantasma OWL family to be our indispensable member showing your avant-garde distinguishing characteristic. This product was created by Fantasma OWL team consisted of hi-tech elites of Taiwan after years' devotion in R&D and repeated tests for upgrades with huge capital investment to be deemed as Exceptionally Innovative Unique product in Tuning field for the decade. Read this manual carefully to ensure correct wheel mounting and skillful use of the product to make the most of its special on-wheel lighting imaging effects for you to be the eye-catching target every time you cruise down the street in the evening.

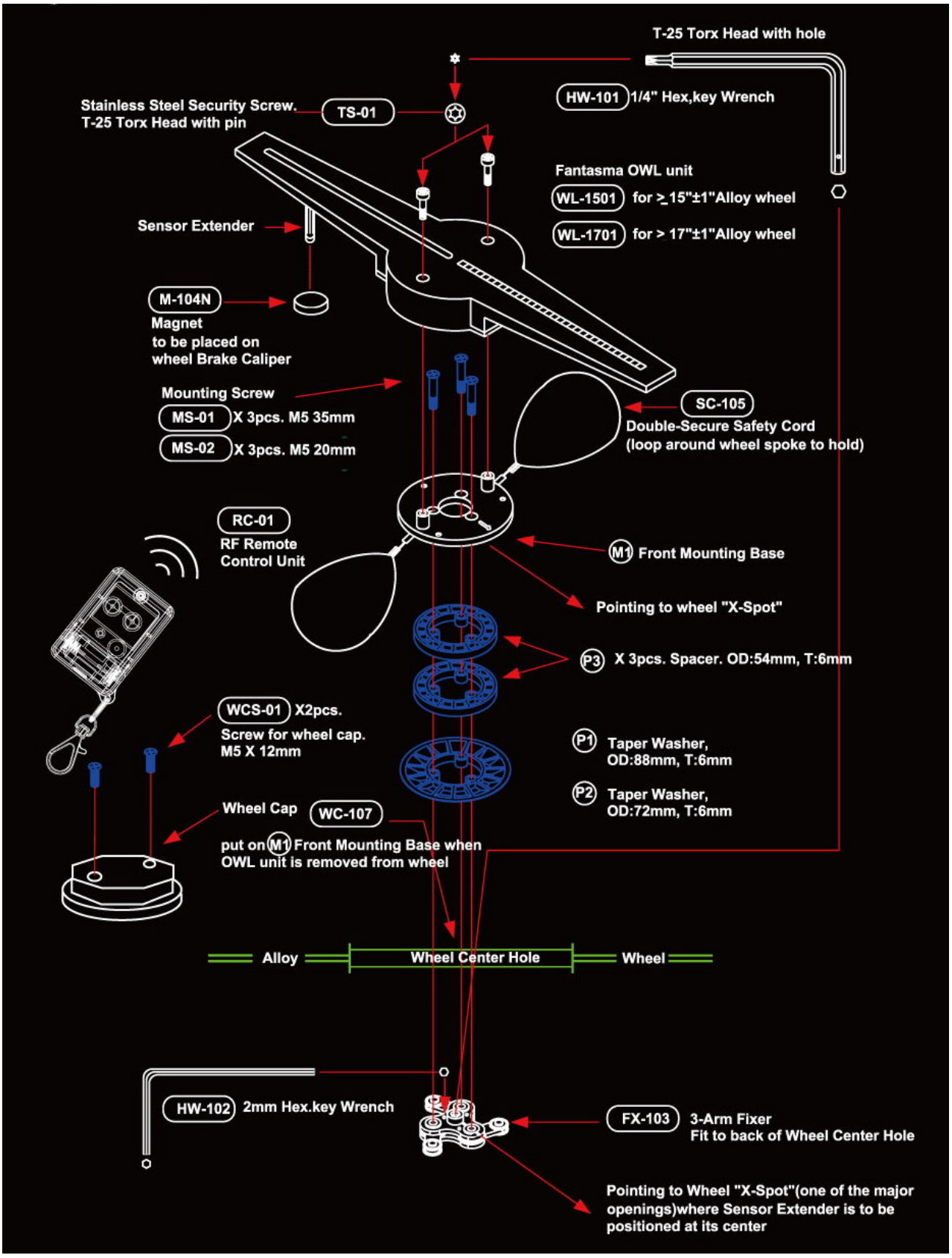
System Introduction:

1. OWLunit, Remote Control & Parts:

2. Parts List:

Part No.	Q'ty	Description/ Specs.
WL-1701, WL-1501	1	17"/15" OWL unit
RC-01	1	Remote Control
HW-101	1	Large Allen Key Wrench (100*60*H6.35)
HW-102	1	Small Allen Key Wrench (60*30*H2)
FX-103	1	3-Arm Fixer
M-104N	2	Magnet (N35-OD20xT5)
SC-105	1	Safety Steel Cord Kit (1-spacer, 2-cord, 2-screw)
CD-106	1	CD ("OWL Image Designer" Editing Software & User Guide)
WC-107	1	Wheel Center Cap
M1	1	Front Mounting Base, Aluminum
P1	1	Large Taper Washer (88*6mm)
P2	1	Small Taper Washer (72*6mm)
P3	3	Spacer (54*6mm)
TS-01	2	Security Screw, Stainless Steel (M5-30 T-25)
MS-01	3	Long Mounting Screw (M5-33mm)
MS-02	3	Short Mounting Screw (M5-20mm)
WCS-01	2	Screw for Wheel Cap (M5-12mm)

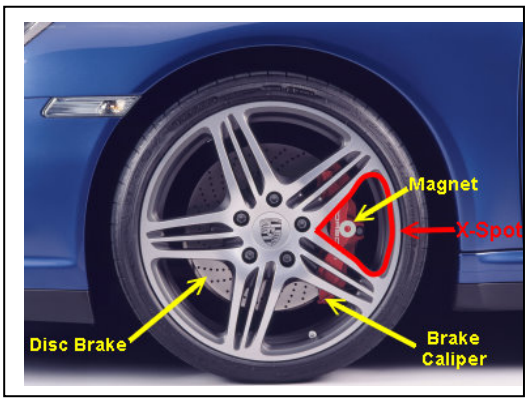
3. OWL System Explosive View:



PART I - Wheel Mounting Instructions

1. Hand tools needed:

[Pic.A]



* **Plier** (to turn 12mm nuts at bottom of Sensor Extender and to crimp fix Sleeve at Safety Cord and cut excessive),
* **Thin-tip Tool** (to pry off wheel center cap if applicable),
* **Small-size & Regular-size Philips Screwdriver** (for bottom lid screws & wheel mounting screws)

2. Check to see if the OWL will fit your wheel:

(a) Make sure it's Alloy Wheel with Disc Brake system and the **Brake Caliper** can be seen through one of the major openings on the wheel between spokes (see **Pic.A**)

(b) Remove wheel center cap to see if there's a raised lip or groove at the edge of the hole (to hold the cap) and if there's at least 15mm space from tip of the wheel axle to the wheel surface Some wheels may be with caps that are too tightly fit to be pried off with tool. In that case, to jack up car and remove wheel to knock off the cap from inside of wheel is recommended.

3. Installing of Magnet & Wheel Fixing System :

(a) Select one of the major openings (called **X-Spot**, see**Pic.A**) on the selected wheel where the OWL unit is to mount, where the Sensor Extender is to be positioned at its center. Move the car until the X-Spot of the wheel is positioned right over the brake caliper where the Magnet is to be placed at its center.

(b) Take **Magnet (M-104N)** from small white box in the parts box (2 are provided) and place one on flat surface of Brake Caliper (place two to increase height and magnetic strength in case Brake Caliper is in far deep area). In case Brake Caliper is made of non-magnetic alloy material, strong high-temp. type of adhesive glue is needed to have the Magnet attached.

(c) Take out from parts box **3-Arm Fixer (FX-103)** and put 2 long mounting screws (MS-01) into the two threaded holes which are without 2 lines crossing them to turn a few threads in for easy holding. Put hex. end of **Large Hex. Key Wrench (HW-101)** into the center hex. Socket of the 3-Arm Fixer. With one hand holding the Wrench and the other hand holding the two screws, place the 3-Arm Fixer into the wheel center hole and then turn the wrench hard to expand the 3 arms right against the wall under the raised lip or into the groove. While still holding the wrench to push tight, remove the two screws and take **Small Hex. Key Wrench (HW-102)** to tighten the 3 small set-screws one by one until the 3-Arm Fixer are firmly fixed onto the wheel center hole under the raised lip (see **Pic.B** & **Pic.C**).

(Pic.B)

(Pic.C)

(d) Find from parts box **Double-Secure Safety Cord kit (SC-105)** which is to hold OWL unit secure from falling off the wheel to give chance for parking car to handle problem just in case the 3-Arm Fixer got loose or its arms broken etc. during driving. Take **Front Mounting Base (M1)** and tighten the terminal end of the 2 safety cords onto the bottoms of the two threaded poles or threaded holes besides them (considering easy looping of safety cords around wheel spokes near them) at the back (flat) side of the M1 Base with 2 small screws provided (see **Pic.D**)

(e) Have OWL unit with M1 Base and SC-105 Safety Cord kit fitted to its bottom and hold the unit at the best mounting position on wheel (Sensor Extender pointing to Magnet on Brake Caliper, and a distance of 5~10mm is kept from underside of the ends of the two wings to wheel rim surface) and visually estimate the distance to the wheel center hole surface to decide which of the **Taper Washers (P1 or P2)** to fit the center hole size and how many of the Spacer (P3) should be placed in between. If the wheel center is not much recessed or the wheel face is basically flat, there may not be enough room to put any washer or spacer.

(f) Take M1 Base with SC-105 Safety Cord kit fitted under and place the assembly onto the center hole with its arrowhead matching the double lines on 3-Arm Fixer fitted inside the center hole pointing to X-Spot and add under it the estimated type/quantity of P3 & P1/P2 as per estimated at the above (e). Select **3 mounting screws** of proper length (**MS-01 at M5-33mm**, or **MS-02 at M5-20mm**) to tighten onto 3-Arm Fixer and thus clamp center hole lip securely to form a rock-steady mounting base on the wheel center for OWL unit.

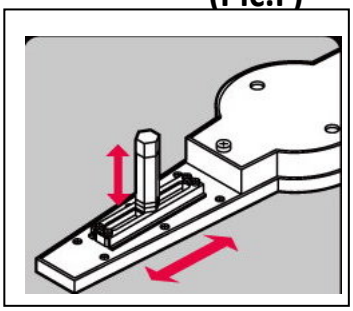
(Pic.D)

(Pic.E)

(g) Following Step (d) of the above, push the Sleeve on Safety Cord (with one end fitted to the M1 Base now) up to the terminal end and pull the other loose end to loop around the nearest wheel spoke. Pull out the cord to insert through the Sleeve and then pull with full force while using long-nose pliers to crimp hard at both ends of the Sleeve to permanently fix cords in place and cut the excessive cord after the Sleeve (See **Pic.E**). Repeat the same steps for installing another Safety Cord to complete Double-Secure system on the wheel.

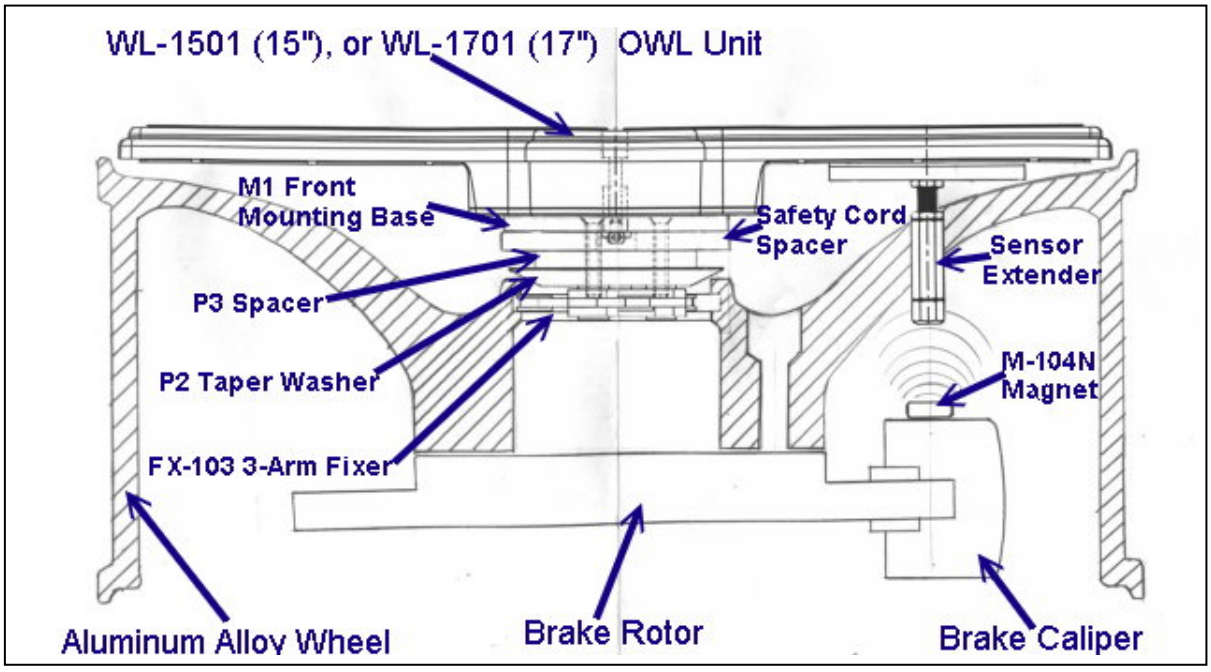
4. Mounting of OWL Unit onto Wheel Fixing System:

(Pic.F)



(a) Place OWL Unit onto the M1 Base with the two screw holes onto the two threaded poles of the base and the Sensor Extender pointing to the Magnet on Brake Caliper at center of X-Spot. If Sensor Extender is not aligned with the Magnet and/or its tip is too far away from or too close to the Magnet, take Plier or 12mm wrench to loosen Hex. Nuts at bottom of Sensor Extender to move it aligning to Magnet and/or turn the hex. body of Sensor Extender to proper length (with distance of its tip to Magnet at 20 +/- 10mm). Then turn the Hex. Nuts tight to fix Sensor Extender in place (See **Pic. F)**

(Fig.G)



(b) Loosen the two small screws from bottom of OWL Unit and remove the bottom cover. Put 4 of AA-size batteries (1.2V~1.5V range) into the battery chamber and the LED lights up with a color-changing running light indicating the OWL system is working. A CD of Dedicated Image Editing software "OWL Image Designer" is also provided to allow users to to edit their own image files on their own computer and save into their own USB Flash Drive in OWL-format. Upon inserting this USB Flash Drive to the USB Data Port at battery chamber (see Pic.H), the running light stops on the spot meaning the edited image files are being uploaded to the system. As soon as the file uploading is complete, the LED light resumes running which means the old files have been covered by and replaced by the new files. USB Flash Drive can then be removed.

(Pic.H) Battery Chamber

Front →

(Pic.I) Right-hand Wheel

(Pic.J) Left-hand Wheel

← Front

(c) OWL system was preset at the factory to display image at upright position on turning wheel with the OWL unit to be mounted at Right-hand wheel (to spin clock-wise) and with Magnet to be located at horizontal level from wheel center to the front (at 0° angle, Brake Caliper at the right side of Right-hand wheel or to the front). There are two slide Switches in battery chamber - **180°/0° Switch** (preset at **0°**) & **L/R Switch** (preset at **R**). In case Brake Caliper (onto which Magnet is to be attached) of the wheel is located to the rear from wheel center (**180° angle,** see **Pic.I**), the **180°/0° Switch** in Battery Chamber needs to be pushed over to **180°** position for images to be kept upright on turning wheel. For OWL Unit to be mounted on Left-hand wheel (to spin counter-clockwise), then the **L/R Switch** needs to be slided to **L** position before mounting to the wheel.

(d) After having set the Switches at the correct position and adjusted the Sensor Extender to the proper Length & position, loaded 4 fully charged AA-size batteries and put back the bottom cover tightened with 2 screws. Place OWL Unit onto the M1 Base fixed on the wheel and tightened 2 Stainless Steel Security Screws (ts-01) with Torx end of Large Hex. Key Wrench to complete the mounting procedure. With OWL units mounted on the wheels, blazing images start to float on wheel face circulating to display as per the sequence and time set when the car speeds up to 16 km/hr. and will keep stable up to 100 km/hr. limit. Over 100 km/hr. speed, the images may become shaky and unstable as it's over the calculating capacity of the CPU used.

5. Important Notes:

(a) OWL System consists of high-end Micro Processor, magnetic-sensing, photo-electric & remote control systems plus high precision circuits & component part. Handle with care during installation and driving to avoid severe shocks & impacts even though its housing is made of top grade high strength high impact engineering material. Do not turn on the system on a running car if the temperature is below -10°C (14°F).

(b) A **RF Remote Control Unit (RC-01)** is provided to allow turning the OWL system OFF & ON when needed at certain conditions. In case of operating remote control from inside of the car, better to open window and reach out the hand as far as possible with remote control unit towards the OWL-mounted wheels lest the vehicle body & solar film etc. should cause shielding to affect the radio frequency transmission. The effective distance of remote control is at least 15 meters (50 feet) at open field.

* NOTE: The control system circuits are sophisticated and microcontroller needs time to operate command. When the unit is turned OFF, It will take about **3 seconds** to activate the system after pressing ON button. Please pay attention to such **3-Sec. delay** characteristic and do not press ON or OFF button again within 3 seconds.

(c) OWL Unit accept 4 pcs. of standard AA-Size Battery either of regular 1.5V dry-cell/ Alkaline type or 1.2V Rechargeable type (Ni-MH/ Ni/Cd) as power source and can get easily from shops around street corners. It can run about 6 hours continuously using 4 new Alkaline batteries or 4 fully charged 2000mAh Ni-MH Rechargeable Batteries. In normal running speed when the lighting images become incomplete, it could be running out of power and needs to be replaced with new batteries to continue operation.

(d) OWL Unit should be removed from the wheel and place inside the car or other place for safe keeping in case of the following conditions.

[1] to go through brushing type of automatic car wash,
[2] to drive through bad roads - rough bumpy with pits, mud, flood or snows,
[3] to park the car outdoor for long term

(e) NOTES when parking:

[1] When parking at roadside or mechanical car park etc., be aware of and stay away from the raised shoulder or standing objects to avoid OWL Unit getting damaged when the wheel gets to close.

[2] To loosen two Security Screws and remove OWL Unit from wheel to place inside the car is strongly suggested when parking car outdoor at unfamiliar public area.

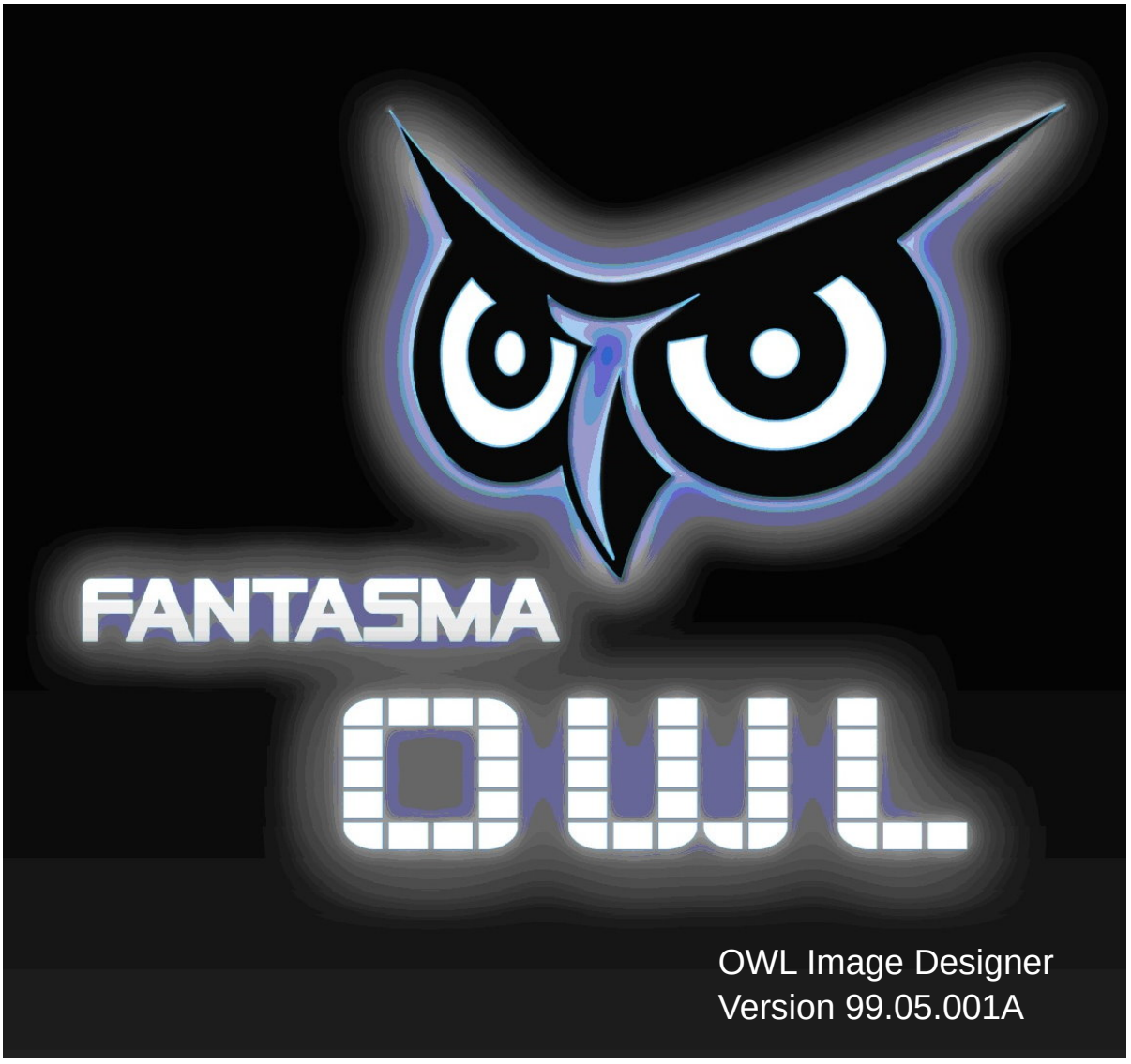
[3] A **Wheel Cap (WC-107)** is provided with two screws to cover on M1 Base for better looking and keeping dirt from getting into wheel axle and 3-Arm Fixer area or stuck in threaded poles of M1 Base when OWL Unit is removed from the wheel for long enough.

(f) Based on the demand of frequent replacement for batteries when running OWL system, a most safe and efficient “Smart LCD 1hr. Fast Charger” as well as high-quality Rechargeable batteries are developed and made available with OWL system as optional items for users to order on demand (see pictures at below).

PART II – User Guide to

“OWL Image Designer”

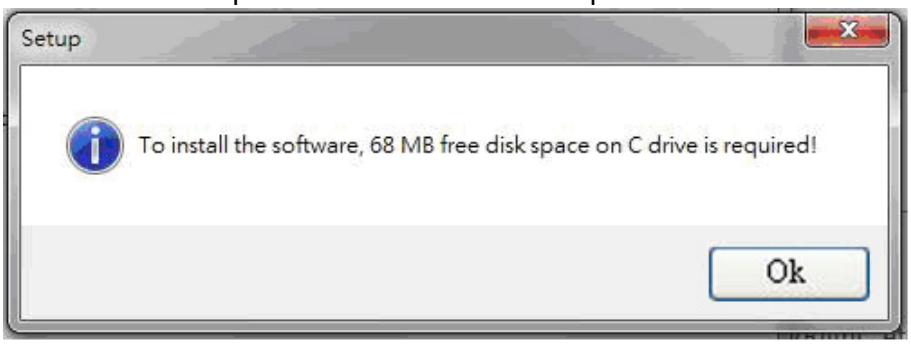
Dedicated Image Editing Software (CD provided)



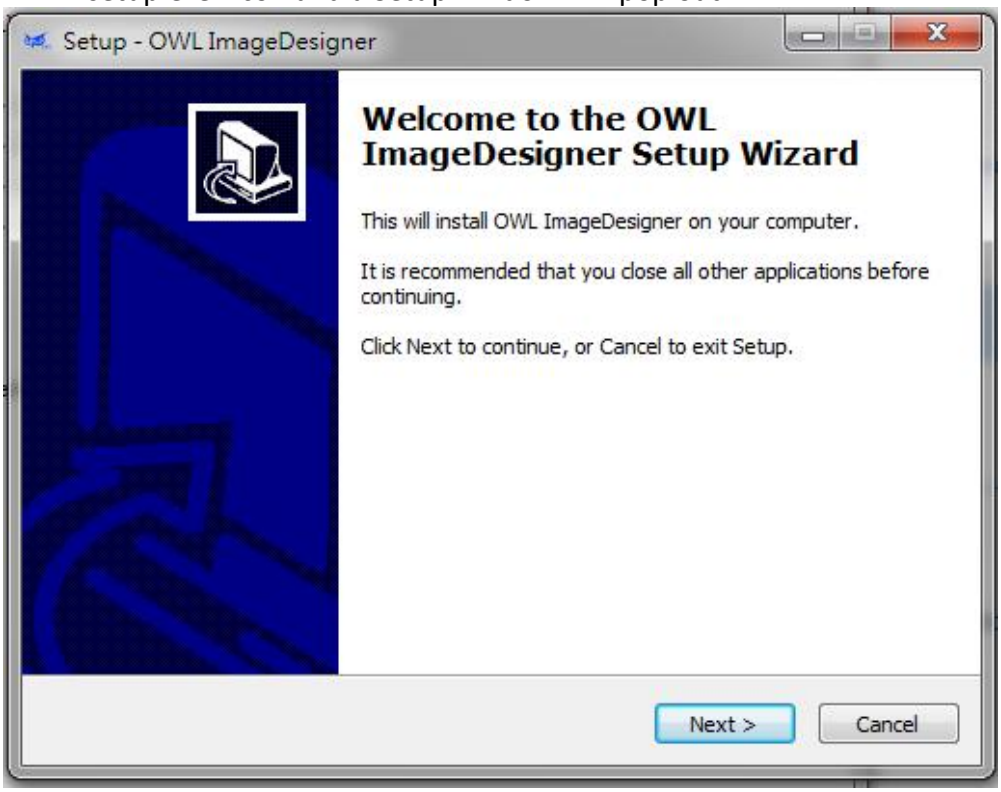
Shiniest Industries, Inc. – Taiwan

1. Install “OWL Image Designer” program into your computer：

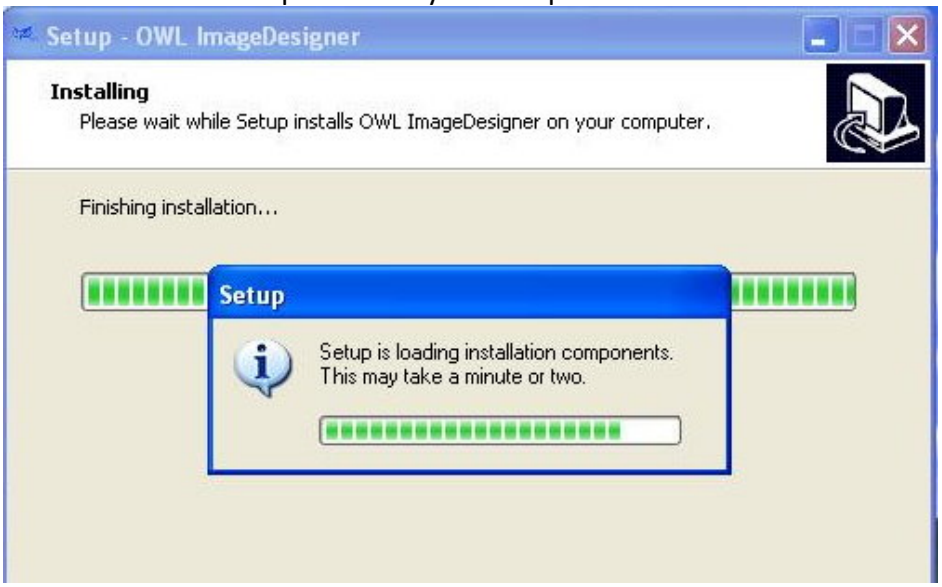
(a) Place the **“OWL Image Designer” CD** provided into the DVD Drive of your computer to run it on the screen and a Setup Reminder box will show up.



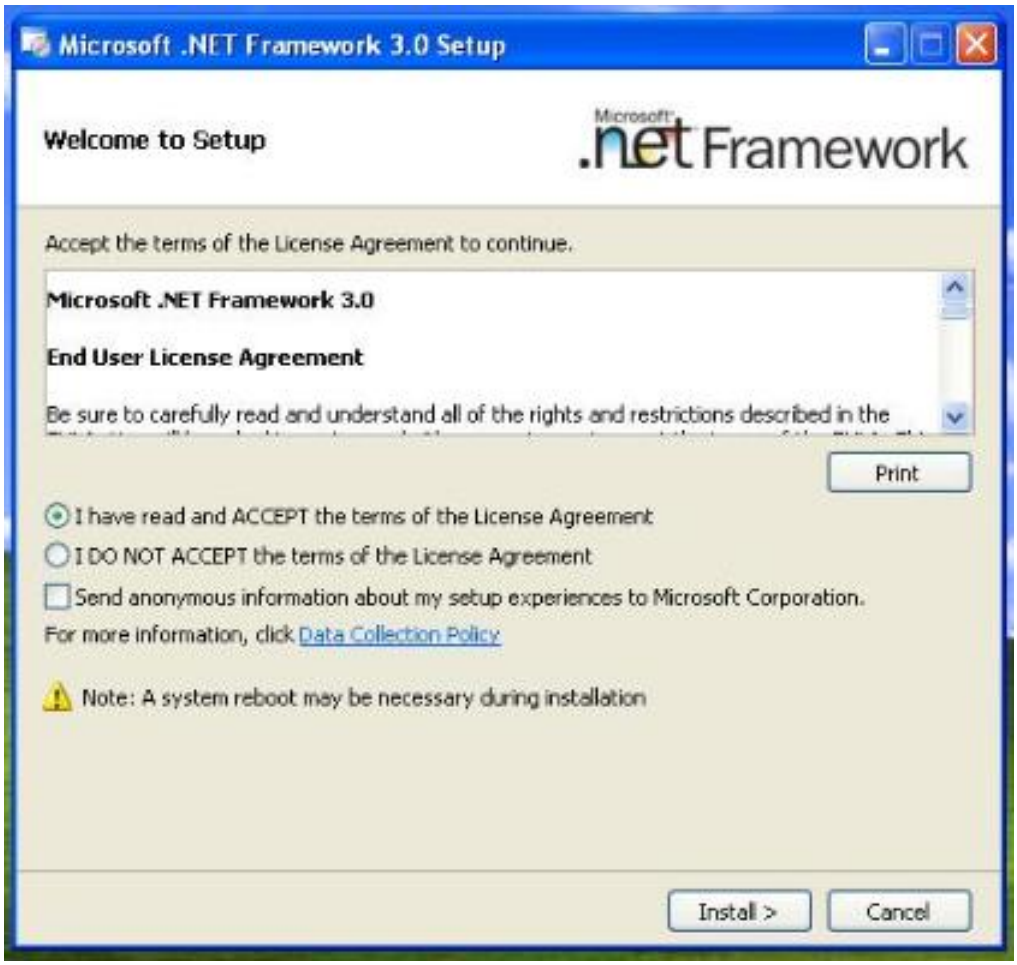
(b) Click “OK” and an **OWL icon with file name “setup.exe”** will show up. Double click the “setup.exe” icon and a Setup window will pop out.。



(c) Click “Next” to start installing the program. It will take a minute or two for “Setup” to load installation components in your computer.



(d) The program requires "**Microsoft .NET Framework**" to run the system. If the installation wizard detects and finds no "Framework" in your computer, it will initiate Setup of "Microsoft .NET Framework" automatically and a Welcome window will pop out for you to install. Select ACCEPT and click "Install" button to go. A "Setup Complete" window will appear when "Microsoft .NET Framework" has been installed successfully.



2. Start "OWL Image Designer" Program：

(a) When the first-time installation is finished, the system will run the program automatically to display on the screen.

(b) To run the OWL program again, look for OWL icon from the tabletop or from "Start" menu (if used before) and then click it to run.

3. Enter into Main Program Window：

When the OWL icon is clicked, the Image Designer Window will show up with a reminder box saying:
Select "new folder" or "open folder" from "file" pull-down menu
Click "OK" to enter into OWL ImageDesigner Window.

4. Create “New Folder”:

On the Image Designer Window, click “File” at the top Menu Bar and select “new folder” and a dialogue box will pop up asking to enter new file name. Key in the name and click “OK” and a number 3 will appear at “Set Time Duration as (sec.)” box at the upper right of the OWL ImageDesigner Window which means the system is ready to work.

5. “Open Folder”：

On Image Designer Window, click “File” at the top Menu Bar and select “Open Folder”, an “Open Folder” window will pop out with a list of saved folders for selection. Select the folder desired for editing and click “OK” and all the images saved in the selected folder will display in the workspace at the left with small pictures listed in the order of Sequence Numbers.

6. Start of Editing Functions:

A. Work in the Image Designer Window

(a) Add Images:
Click “**Add Images**” button to enter into your computer disks and browse to the location of the desirable image files for editing. You may select multiple files and click “Open”, and all selected files will display on the left pane with small image pictures followed by given sequence numbers in the order of selection time.

(b) Options for Add, Delete, Edit:
Right-click on any of the images and a drop-down menu will pop out with 3 options to select – **Add, Delete, Edit**. Images can also be added this way to display at the bottom of the selected image list, or deleted.

(c) Select Image File for editing:
Select any of the image files displayed on the left-pane and

[1] the selected image will be displayed at the **Preview** Window at the right pane and also at the On-Wheel Preview Box as well. In case the image file size is too large to be displayed entirely on the wheel, the On-Wheel Preview will only show portion of it, which means you need to edit the file to make its size and position correct for on-wheel display.

[2] the background of **the two arrowheads** will turn from grey to light blue which means the selected image can be moved upward in display order by clicking the UP arrowhead, or moved downward by clicking the DOWN arrowhead

B. Work in the "Image Editor" Window

(a) Double-click any image file and an "**image Editor**" Window will appear with the image shown of the Preview window. A red circle at the center of the Preview Window stands for the on-wheel display area.

(b) "**Resize**" image to fit 17" or 15" wheel face:
The image size to fit 17" wheel face is 77x77 pixels and to fit 15" wheel face is 73x73 pixels. Most image files are over the fit size for OWL system and will appear oversize in the Preview Window. The "Resize" buttons provide a quick easy way to adjust image size to fit into the wheel face. If you

got oversize of your image file on the Preview Window, click “17 Inch” button if your OWL is WL-1701 for 17” wheel, or click “15 Inch” button if you purchase WL-1501 for your 15” wheel. Image can be dragged to better fit into the circle.

(c) Adjust Angle or Dimension of the image:
If the image is still not good enough for display after it’s resized, you may

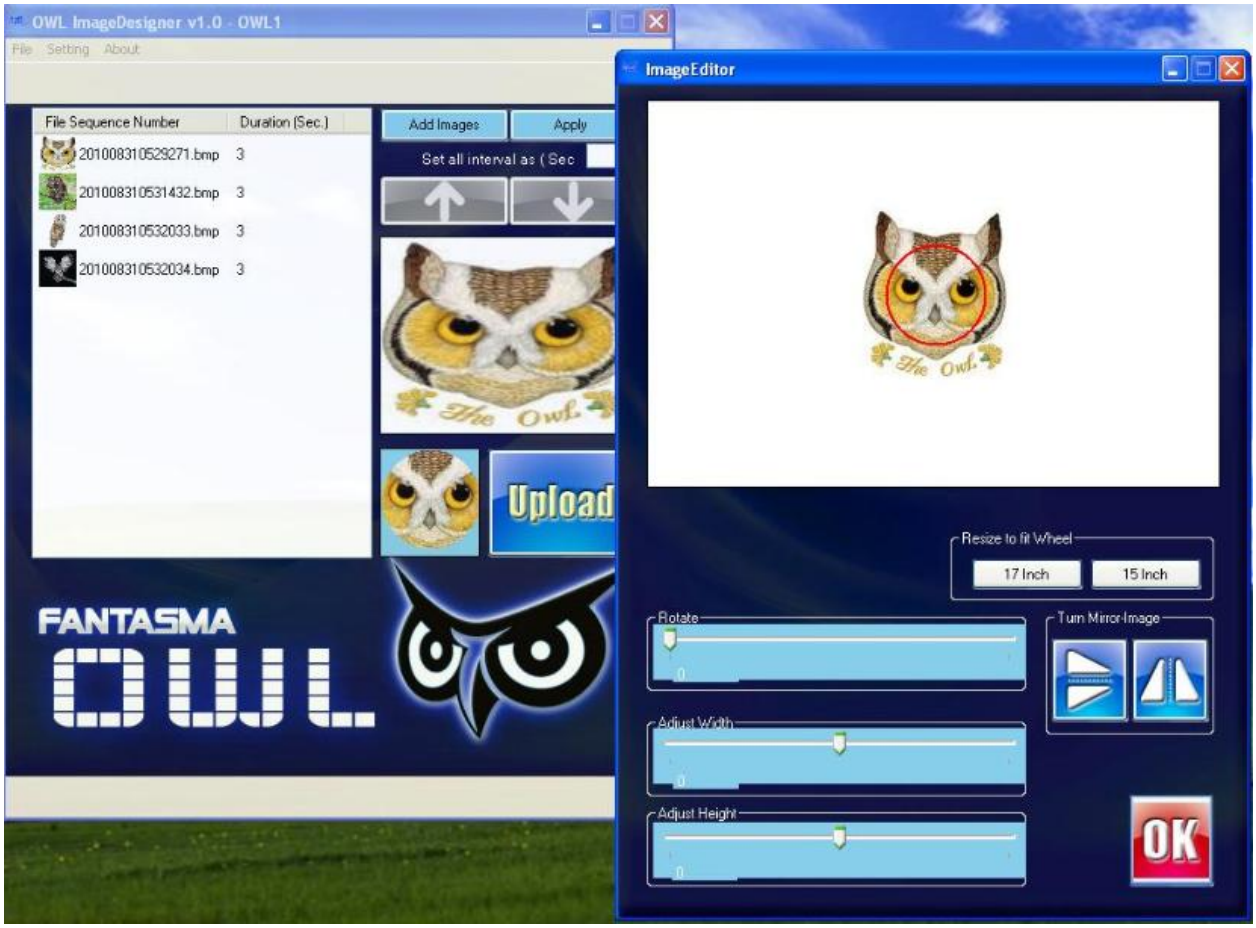
[1] Drag the slide-button at the left end to move along the “**Rotate**” bar and the image will follow to rotate around circle center up to maximum 360°.

[2] **Adjust Width**: Drag the button from the center towards left to reduce and towards right to extend the width.

[3] **Adjust Height**: Drag the button from the center towards left to decrease height and towards right to increase height.

[4] **Adjust Mirror-Image**: There are two icons at the right side of “Rotate” Bar. Click the **right** one and the image will turn **Left/Right** mirrored. Click the **left** one and the image will turn **up/down** mirrored.

(d) Set time duration for images to play:
On the Image Designer Window at the box of “**Set all interval as (Sec.)**” at upper right corner, type in the length of time (unit: second) desired for all the images to play (3 was originally set) after all the images are well edited for wheel display and placed in good order. Then click **“Apply**” button and the number will apply to all the images at the left pane. In case you wish to change the time set for a certain image, just click on the corresponding number of that images and retype a new number on it. If no length of time is set for the file, the system will run the file at the preset ‘0’ which is the fastest speed.



7. Save Folder：

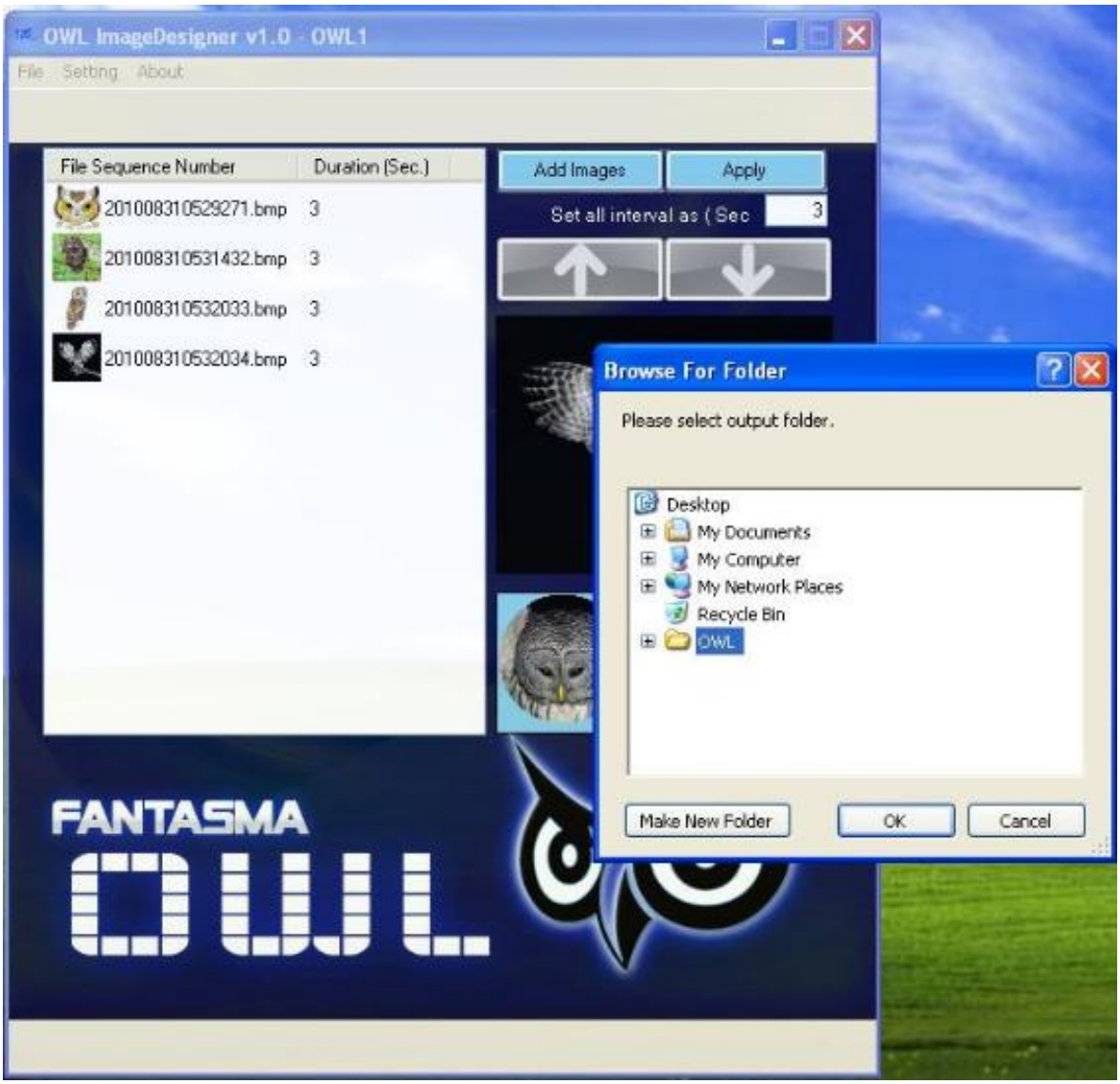
On the Image Designer Window, click “File” at the top Menu Bar and select “**Save Folder**” and all the edited files will be saved under the same folder name.

8. Save As..：

On the Image Designer window, click “File” at the top Menu Bar and select “**Save As**..” and a window will pop up asking to enter the name you wish to save for the folder. Key in the name and click “OK” and all the edited files will be saved under the name entered for the folder.

9. “Upload” edited files in OWL format：

When you have finished editing and saving of all images ready to upload those images to the OWL unit, you need first to prepare a **USB Flash Drive** (better to use a dedicated one without any file, folder or data in it) and plug it to the USB port of your computer. Then click “Upload” button and you will enter into computer network to browse for folder to save. You may select the USB Flash Drive to save all edited files, which can then be removed and plug onto the USB data port of the OWL unit for transferring all files to the OWL CPU; or you may save files in any of the desired folder for future use. All the edited files uploaded will be saved in .DAT format for the OWL system to be able to read and play on wheel at certain speed.

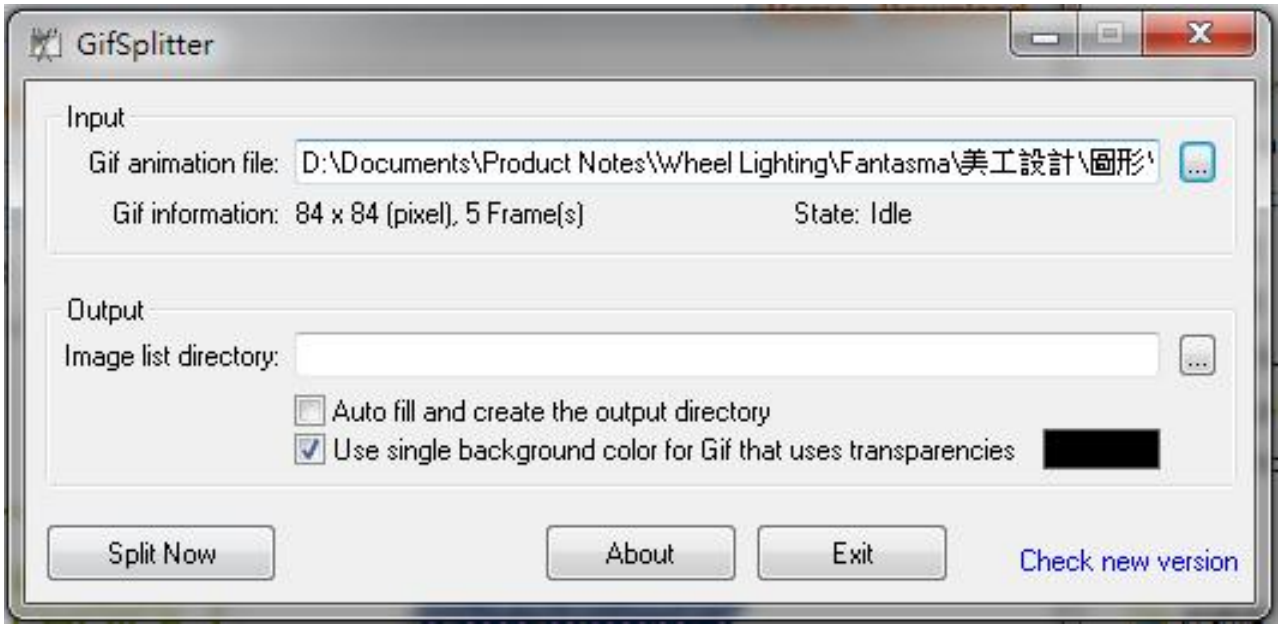


10. **On-Wheel Virtual Play Preview：**

A window of on-wheel virtual play preview will appear when the “Upload” button is hit. Each image in the uploaded folder will play in its order at the length of time as set simulating what will be displayed to view on the wheel of your car.

11. Editing of ".GIF" File Format:

If you want to use image file of ".GIF" format to run animated images, you may use "GifSplitter" program (also contained in the CD) to break GIF animation down into individual image frames in ".BMP" format and then add into the system.



12. Shifting of Language System:

At the top Menu Bar of the Image Designer Window, click "Setting" → "Language" and select the language desired to use. Currently there are only English and Traditional Chinese available. In the near future, more mainstream languages will be made available in this software for users in different parts of the world to use.

The pictures, graphics and description in this manual are for reference only; they may not perfectly match what you have on hand. Specifications and/or parts supplied with the product may be slightly varied for sales in different regions or to different distributors. Please consult with authorized distributors for product details and technical assistance.

FCC ID: ZYYWL151702

FCC Compliance and Advisory Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, according to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try correct the interference by one or more of the following measures:

1.Reorient the receiving antenna.

2.Increase the separation between the equipment and receiver.

3.Connect the equipment into and outlet on a circuit different from that to which the receiver is connected.

4.Consult the dealer or an experienced radio/TV technician for help.

Any special accessories needed for compliance must be specified in the instruction manual.

Warning: A shielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used. Use only shielded cables to connect I/O devices to this equipment.

CAUSION: Any changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

IC statement This Class B digital apparatus complies with Canadian ICES-003.Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.