# *LTL ACORN* ®

**Low Power Consumption Infrared Scouting Camera**

**Ltl-6511-4G(EXT.LCD)**

**LTE Cellular Mobile Communication Series**

**1080P HD Video**

**Trigger Time 0.8 Seconds**

# USER'S MANUAL

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## General Information

This manual applies to model Ltl-6511-4G(EXT.LCD), Ltl-6511W-4G(EXT.LCD), The series of cameras are 4G LTE cellular mobile communication network transmission cameras, developed by our company, which have external button control boxes with display screens and low power dual PIR sensor.

The series of cameras use low-power dual PIR sensor and LTE wireless module which belong to our company's latest research and development. Working in the camera, low-power dual PIR sensor has the characteristics of high accuracy and sensitivity, which avoid the camera mistaken or missed, as well as low standby current. Camera standby current has reduced to 60uA, far lower than the line's other brands of hunting cameras standby current 400 ~ 2000uA, which greatly extends the camera standby time. The built-in 4G LTE wireless module uses the high-end high-pass chip. You can choose different bands with TDD LTE and FDD LTE compatible 4G communication. The maximum uploading speed can reach 50Mbps, having the features of high data transmission speed and supporting many network frequencies. In the 4GLTE network mode, you can quickly send 12 million pixels of the original big picture or less than 10MB of video files to the user's mailbox or FTP server, and other brands of 4G wireless transmission cameras in the market can only send hundreds of thousands of pixels photos, let alone videos can be transmitted. In the 4G LTE wireless network mode, you can quickly send 12 million pixel photos or less than 10MB of video files to the user's mailbox or FTP server, while other brands of 4G wireless transmission cameras in the market can only send hundreds of thousands of pixels of the photos. The series of cameras optimize the 4G transmission mode, so that you can choose to set the shooting immediately after the shooting, or set the sending time to the day which sends the photo file to the mailbox or FTP server. Using centralized delivery can greatly reduce the times of 4G wireless module start-up, which greatly saves the energy. In order to save 4G traffic flow, users can program the camera to send thumbnail to mobile or email and control the 4G module to send back the full size picture which is valuable by SMS remote control function. The superior SMS remote control function supports to change camera parameters, get camera shooting and sending picture back by sending SMS remote control command to 4G module, make it convenient to operate.

The working principle of this series camera is with its highly sensitive Passive Infra-Red (PIR) sensor to sense the infrared signal from animal or human, automatically triggers to take pictures, video and send MMS to

mobile phone, send email to E-mail account or upload to users' FTP server directly. The rest of the time is in the standby state, when only PIR infrared sensor part is working and the standby current is only about 60uA.Please read the USER'S MANUAL in details before starting for better understanding and operation.

## 1. 1 Features

- High quality picture of 12MP resolution.
- Real high-definition video of 1440x1080 with audio record, H.264 format.
- With the USB C TYPE socket, you can plug external button control box with screen 2.4" TFT color LCD display, easy to set parameters, preview, replay photos and video.
- With 4G LTE wireless transmission module, the uploading speeds can be up to 50Mbps. With patented technology can be completed in 1 to 2 Minute to send 1M BYTE photo files (on the best network conditions and the appropriate send protocol).
- The captured files are sent to the phone, mailbox, or FTP by MMS, mail or FTP via the 4G wireless network. Single-shot photo or video file size can reach up to 10M, while more than 10M size of the video will be automatically divided into multi-segment less than 10M file to be saved and sent.
- SMS remote control supports to change the camera settings, trigger camera remotely and control camera to send back full size picture by sending SMS command.
- FTP uploading function, camera uploads the file to appointed FTP after shooting, users can download the picture or video from FTP.
- The centralized sending function, when the set time is reached, the camera will send out all the photos or videos taken in the day at once. It can greatly save the power consumption.
- LTL-6511W wide angle series products with high quality wide lens of 100 degrees to wider the shooting range.
- Cam + Video mode enables camera to take both picture and video at every trigger.
- Burst shooting with 1 second interval.
- Optional to equip with 42 LED lights of 850nm or 940nm for great night vision.

- Ultra-long standby time: more than 3 years with 4 AA alkaline batteries and 6 18650 lithium batteries in battery box.
- Working temperature: -45℃ - +70℃.
- Tight waterproof housing: IP66.
- Patent technology of Low Power Dual PIR Pyroelectric Infrared Sensor, the camera detects animals in advance from wide scope in two stages, then quickly trigger to shoot, standby current is about 60uA, makes it to be the pioneer in the industry.
- The trigger time is less than 0.2s when animals pass by from sides.
- Quick trigger speed (0.8s).
- Two high accuracy timers make the camera work in two specified periods as request.
- Set an ID for the camera, the prefix of file name could be same as the ID, makes it easy to classify the pictures from different place.
- Date, time, temperature and moon phase could be shown on time stamp of the picture.
- Password protected to prevent unauthorized operation.
- Flexible setting selection: setting parameters of camera and 4G data on PC setup, android or Apple IOS mobile APP.
- Optional memory overwrite function: delete the early pictures or videos automatically to make room for new records.
- Security box is optional for purchase.
- Support to fix by tripod.

## 1. 2 Application

- Wildlife animal and plants observation
- Security and surveillance

## 1. 3 Illustration

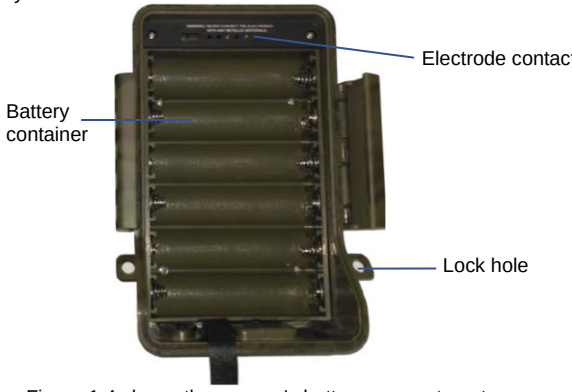
- Figure 1.1 shows the front view of the camera
- Figure 1.2 shows the bottom view of the camera
- Figure 1.3 shows the camera's external button control box with display screen
- Figure 1.4 shows the camera's battery compartment


Figure 1.1Font View of the Camera


Figure 1.2 Bottom View of the Camera

The camera provides the following connections for external devices: port of external LCD display and keypad control box, SD card slot, SIM card slot, TV out jack, and external DC power in jack.2 positions of power mode switch: switch inward: OFF mode, switch outward: ON mode. To enter the TEST test mode, you need to insert the external button control box with display screen when the switch position is ON.


• Figure 1.3 shows the camera's external button control box with display screen




• Figure 1.4 shows the camera's battery compartment

**CAUTION: If you are not using the camera for an extended period of time, it is highly recommended that you remove the batteries from the camera to avoid possible acid leak that may damage the camera and void the warranty.**

## 1. 4 Keypad


Keypad

| Keypad | Function |
|---|---|
| Power mode switch | OFF: power off. ON: automatic shooting. ON (connect with external button control box with display screen): enter test mode. |
| MENU key | Enter/exit menu. |
| Left key | Turn on 4G menu (TEST mode). Choose submenu setting item of menu (me nu mode). Long press to zoom in the picture when previewing pictures(replay mode) |
| Right key | Take photo (camera mode). Take video (video mode). Exit enlargement of picture, play or stop recording video(replay mode) |
| Up arrow key | Enter video mode (TEST mode). Move upward (menu/replay mode). Long press to move picture upward, short press to move picture leftward (when zoom in picture in replay mode). |
| Down arrow key | Enter camera mode (TEST mode). Move downward (menu/replay mode). Long press to move picture downward, short press to move picture rightward (when zoom in picture in replay mode). Set the brightness of night picture in Camera mode. |
| OK key | Confirm. Enter/exit reply mode. |
| Working indication light | Red light will flash for five timeswhen the camera enters ON mode. |
| PIR indication light | In TEST mode, red and blue indication light will flash accordingly when the internal left and right PIR detects the animal. |

# Getting Started

## 2. 1 Load Batteries

- Push inward to open the battery door of the main unit, load 4 AA batteries and press to close battery door.
- Load 6 18650 lithium batteries in the battery box (keep the battery polarity same with the sign on the battery container).
- Must load all new and full batteries.

## 2. 2 Insert SD Card

Unlock the lock buckles and you will see the SD card slot at the bottom of the camera, insert SD card as below picture slightly into SD card slot, you will hear the sound like “click” and the card insertion is finished. Please make sure the SD card insertion direction is same with the sign aside the SD card slot.

Insert SD card

**The camera does not come with internal memory. It will not work without a SD (Secure Digital) memory card or SDHC (High Capacity) card. Before inserting the SD card, please make sure the write-protect switch is at “OFF” side (NOT at the “LOCK” position), format the SD card on camera before using. The maximum supported SD card capacity of the camera is 32GB.**

## 2. 3 Insert SIM Card

SIM card should be bought from the local mobile phone network operator (MPNO), it must support LTE 4G network and provide SMS, MMS and data traffic service.

Insert SIM Card

At the left side of the camera back, you can see the SIM sign and the SIM card slot. Insert the SIM card into the slot as the sign slightly and you will hear sound “click” and finish insertion.
Please make sure the insertion direction of SIM card is correct when inserting.

Note: We know that in our 4G camera using the Chinese Telecom operator's SIM card, SMS remote control function will not work. For the use of SMS remote control function, it is recommended to use other operators’ SIM card.

## 2. 4 Insert the external button control box with display screen

After the correct connection of the camera and the external button control box with display screen, switch to the ON position which can enter the test mode. If there is no external button control box with display screen, the camera will enter ON mode automatically when switch is at ON position.

Insert the external button control box with display screen

There is a C TYPE USB socket at the bottom of the camera main unit, insert the plug of external button control box with display screen into the socket and finish installation. The display cannot plug well if in opposite direction.

## 2. 5 Enter Test Mode

After correctly connecting the external button control box with display screen, turn the switch outward to the preview test mode. external button control box with display screen with the keypad, in this case, you can use the camera as a normal digital camera to take picture and video by controlling the keypad.

- Press  to take video (move upward in menu or replay mode).
- Press  key to set the camera to take pictures (press down arrow key in MENU or REPLY mode).Set the brightness of night picture in Camera mode.
- Press  **SHOT** key to manually take picture or video and save in SD card. Furthermore, press  **SHOT** key to play or stop playing video when replying.
- Press  **REPLAY** key to enter Replay mode (confirmation function in menu mode). At this moment, press up and down arrow key to turn page, left and right key to zoom in and restore the picture.
- Press  key to enter menu, change parameters setting to make the camera works as required. To change the camera parameters, please refer to the Advanced Settings for better operation.
- Press  key to enter 4G parameters and status setting, **please refere section 3.3 for details**.

In the Test mode, you can test the working area of the IR sensor, especially the sensing angle and the sensing distance. Do the following:

- First tie the camera to the tree with a strap and aim at the area you are interested in.
- Walk parallel to the camera from one end of the sensing area to the other. Try different distance and angle to the camera.
- If the indicator light is only flashing blue or red when you moving, indicating that camera will activate in advance at the location of you. If the indicator light is flashing red and blue at the same time, it means that the camera will take pictures at your position.

After doing this test, you can find the best shooting position when you install the camera. In general, we recommend placing the camera at a height of 3 to 6 feet (1 to 2 meters) from the ground.

## 2. 6 Automatic Infrared Sensing Shooting

Without inserting the external button control box with display screen, set the switch to the ON position and then enter the automatic infrared camera mode. After entering this mode, the red indicator light on the front of the camera will flash for five times. When the red light goes out, the camera enters the automatic shooting state. When the red light is off, the camera enters the automatic shooting mode. When there is a game or other objects into the PIR induction area, the camera will immediately start taking picture or video.

The camera has a dual range of long-range infrared sensing technology, it is able to sense the animal and activate in advance before it enters the shooting area, so that the camera enters the status of ready to shoot, the camera will shoot immediately when the animal enter the shooting area. So that you can capture the picture of fast passing animal which in the middle of the picture. If the game enters the dual range of long-range infrared sensing area and then exit, the camera will automatically shut down and enter standby mode after a period of time, start shooting again when the animals pass the camera next time.

**Caution: To avoid potential false triggers due to temperature and motion disturbances, please do not aim the camera at a heat source (e.g.: the sun, heated stone or metal) or nearby tree branches and twigs. The ideal direction to aim at is the north and the open place without heat source.**

## 2. 7 Low Power dual PIR Sensor

In order to extend the working hours of the camera battery, our company has developed the low power dual PIR sensor based on the original dual PIR infrared sensor. The low power dual PIR sensor optimizes the accuracy and anti-jamming capability of the camera, avoiding the mistaken shot and missed shot, and reducing the camera's standby current. To save battery power, an Infer-Red camera is in sleep/standby mode, with only the PIR sensor working. When a person or an animal is detected by the PIR sensor, the camera powers on and starts shooting, then it would enter standby mode after shooting. The time period from being sensing animal to taking the photos is called trigger time. The trigger time varies among different scouting camera brands on the market, generally from 1 to 5 plus seconds. Our LTL ACORN scouting camera has an impressive 0.8 seconds trigger time. The shorter of the trigger timer, the higher possibility to capture the animal.

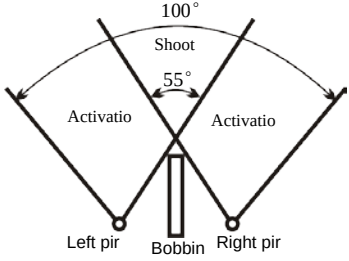
Ltl-6511-4G (EXT.LCD) camera adopts the latest patented technology of the Ltl Acorn, horizontal dual-PIR (pyroelectric infrared sensor) design, this solution has the following advantages:

1、 Standby time is long. The camera uses the low power dual PIR sensor of the latest R & D, reducing the camera's standby current to 60uA, which greatly extends the camera's standby time.

2、 Shorten the time required for shooting. The two side PIR sensors come up with a 100 degrees angle of induction, it is far more than the camera lens angle of 52 degrees. When the game reaches the side PIR area, the camera powers on in advance and gets ready to shoot. If the object continues into the overlapping area of left and right PIR sensor, the camera takes pictures immediately, capturing the whole body of the game. That process could be as short as 0.2 seconds. Usually, when the game passes quickly, the traditional camera may catch a part of it only, or nothing at all, while our camera can capture the complete picture of the game.

3、 Enhanced the camera's anti-jamming capability. As the camera is placed in different environments, it may be subject to varying electromagnetic interference. The camera uses a dual-PIR design, only triggers to take picture when both sides of the PIR are detecting the game, to avoid false shooting caused by insufficient capability of anti-interference of single PIR.

4、 Detect the position of the game. When game comes into detective area from random direction, the corresponding PIR will feedback to camera processor. The system would judge if there is game enters dual-PIR sensing area, whether it is in sense activation area of left/right PIR or in overlapping shooting area of left and right.




In the case the game only enters the sensing area of the side prep sensor but not sensing area of the centre PIR, the system is designed to be powered off after 5 seconds.

## 2. 8 Brightness adjustment of night picture

Switch the camera to TEST mode and enter Camera mode, press ▼ key to adjust the brightness of night picture which will apply to ON mode, it's good to avoid overexposure when the object is too close to the camera and brightness is high.

Three settings of brightness are available for night picture, High, Medium and Low:

High: the highest brightness of night picture between three settings.
Medium: the brightness is slightly weaker than High settings.
Low: the lowest brightness of night picture between three settings.

When adjust brightness in the TEST mode, first press ▼ key to check the present status of the night picture brightness, press again to adjust the brightness to ***High***, ***Medium*** or ***Low***, the camera will automatically save the brightness setting you selected, exit the brightness setting in 4 seconds if no operation.

# ADVANCED SETTINGS

## 3. 1 Set up Parameters on Camera

The LTL ACORN trail camera comes with preset manufacturer settings. You can change the settings to meet your requirements. Please make sure the camera is in the TEST mode. After correctly inserting the external button control box with display screen, battery and SD card, set the camera switch to the ON position, and enter the preview test mode after the camera is turned on. to start setting the parameters.

Press **MENU** key to enter/exit the menu. Press ▲ and ▼ to move the marker to choose menu. Press ◀ and ▶ to change the setting, and always press **OK** to confirm and save the changes, or the new setting would not be saved.

| Parameter | Settings | Description |
|---|---|---|
| **Mode** | **Camera**, Video, Cam+Video | Select to take photo or video clips. In Cam+Video mode, camera takes photos first then video. |
| Format | Enter | All files will be deleted after formatting the SD card. Highly recommended to format the SD card on the camera at the first using. Caution: make sure the important files on the SD card are backed up before formatting. |
| **Photo Size** | 5MP, **12MP**, 2MP | Select desired resolution for photo from 2 to 12 megapixels. Higher resolution produces higher quality photo, but occupies more space and slightly affects the shooting interval. |
| **Video Size** | (1080P)1440x1080 **(720P)1280x720** (VGA)640×480 | Higher resolution produces better quality of video, but occupies more space of the SD card. |
| **Set Clock** | **Setup** | Press OK key to set up date and time. |

| | | |
|---|---|---|
| Picture No. | **01 Photo**, 02 Photos, 03 Photos | Select the number of burst shooting at per trigger. |
| **Video Length** | AVI 10s, optional from 1s to 60s | Select the duration of recording a video. |
| **Interval** | 1 Min, optional from 1 second to 60 minutes | Select the length of time that the camera will wait from when the last picture was taken and written on the SD card, to when it responds to any new triggers. It prevents the SD card from filling up with too many redundant images of the same object, save power and SD card space. |
| **Sense Level** (Sensitivity) | High, **Normal**, Low, Off | Select the sensitivity of the PIR sensor. The PIR would stop sensing with Off setting (usually used in time lapse mode when the sensing shooting is not needed). Higher sense level with longer sensing distance, but easier to be interfered. The Normal/Low setting suits outdoors while the High setting suits indoors or environment with higher temperature. |
| **Time Stamp** | **On, Off** | Select On if you want the camera ID, temperature, moon phase, date & time to be imprinted on photo. Notice: The temperature shown is internal temperature of the camera, the camera will heat at work, it makes the difference between internal and external temperature, and the difference will be small if the camera does not work long time in the field. |

| | | |
|---|---|---|
| **Timer1** | Off, On | Select On and the camera will automatically work within a specified period of the day. For instance, if the starting time is set at 7:00 and the ending time at 9:00, the camera can be triggered from 7:00 a.m. to 9:00 a.m. Outside this period the camera will not be triggered even animal passes by. |
| **Timer2** | **Off, On** | Select On and the camera will automatically work within a specified period of the day. For instance, if the starting time is set at 10:00 and the ending time at 11:00, the camera can be triggered from 10:00 a.m. to 11:00 a.m. Outside this period the camera will not be triggered even animal passes by. |
| **Password Set** | Off, On | Set up a password with 4 digits to protect your camera from unauthorized users with On setting. Notice: Please take note and remember the password well, or the camera should be returned to factory to unlock. |
| **Serial No.** | **Off, On** | Select On to assign an ID for the camera with 4 digits and/ or alphabets, 0~9 and A~Z, the ID will be imprinted on photo with time stamp On. |
| **Time Lapse** | **Off, On** | Select On, the camera takes photos/videos automatically at the preset interval (note: in this mode, the PIR sensor is disabled). This is helpful to observe the ectotherm or the process of plant growing, etc. This feature can work together with Timer feature. |

| | | |
|---|---|---|
| **Side PIR** | **Off, On** | The default setting is On. The two side PIR sensors provide wider sensing range, activate and power on the camera before game entering shooting area so as to catch the game at quick speed when it enter shooting area, especially for those games move fast. |
| **Beep Sound** | On, off | To turn on or off the beep sound caused by pressing the keys. The default setting is On. |
| **SD Cycle** | Off, On | Choose On to overwrite the SD card, which automatically deletes the oldest files when the SD card becomes full to make room for the latest pictures or videos. |
| **Default Set** | **Enter** | Press **OK** key to return all settings to default setting (including the 4G setting). |

**Notice: The password setting is available on camera only, but not on PC setup.**

### 3. 2 File Format

All photos are in JPEG format and video in AVI format of H.264. Ltl-6511-4G(EXT.LCD) saves files in folder DCIM\100IMA4G in the SD card, Picture would be named like IMAG0001.JPG and video like IMAG0001.AVI. You can retrieve the SD card from camera and connect with computer with a SD card reader, view the files on computer directly.
The AVI video file can be played on most popular media players. If it cannot be played by the player you used, please try another.

### 3. 3 Set up 4G Parameters on Camera

After correctly inserting the external button control box with display screen, battery and SD card, set the camera switch to the ON position, and enter the preview test mode after the camera is turned on, press ◀ to enter 4G setting menu. Press ▲ and ▼ key to move the marker to choose menu, press ◀ and ▶ key to change setting and always press OK key to confirm and save the changes, or the new setting cannot be saved.

| Parameter | Settings | Description |
|---|---|---|
| **Language** | **English,** Deutsch, Suomi, Italiano, Français, Magyar, Slovenščina, Čeština, 日本语, Dansk, Nederlands, Русский, Polski | Select the language as your requirement. |
| **4G Send Status** | **Off, MMS, Email, FTP** | Off: Turn off the 4G communication function, then the camera would work as a basic scouting camera and 4G function would not be activated and consume power<br>MMS: Set the recipient mobile number and email address for MMS.<br>Email: Set the recipient email address and sender email address of camera for email.<br>FTP: Set the FTP parameters and save to appointed directory. |
| **Operator** | Auto Settings, Manual Setting | Auto Settings: The camera with pre-load setting of main operators from the worldwide, choose the operator name to finish the setting easily. Manual Setting: Enter the data of SIM card operator manually. |

| | | |
|---|---|---|
| **4G Send Time** | Immediately, 00-23 o' clock | Send immediately: Camera will send the picture/video to mobile, E-mail or FTP immediately after shooting. MMS is able to send thumbnail only instead of full size picture and video. All thumbnail, full size picture and video can be sent to the preset recipient E-mail or FTP by email. 00-23 o' clock: Set up the time to send file intensively. The camera would send the shooting file to mobile, email or FTP as the setting time. The file taken from the setting time of last day to the setting time of the second day would be sent at one time. Camera would automatically control the sending file size not exceeding 10MB of every email. |
| **Max Sent Num/ Day** | **49,** 0~999 | The max number to send file per day. Used to control the limitation of MMS number or 4G traffic. |
| **Remote Control** | **Off,** 10Min, 01~24 Hour | Default setting is Off: Cannot change camera setting by sending SMS command.<br>10 Min, 01~24 Hour: Interval time to receive SMS command. E.g.: remote interval set as 10 Min, the 4G module of the camera would wakeup to receive SMS command every 10 minutes, so it is possible to respond near to 10 minutes after sending command. Remote control function is able to change camera setting, control camera to take photo and send photo back. The camera will start to check if receive control command or not at the preset interval time, so the shorter of the interval, the more timely response to the user's command, of course, the more power consumption. |
| **Query IMEI Number** | OK | Press OK to confirm and show the IMEI number of the module. |

| | | |
|---|---|---|
| **TV System** | NTSC，PAL | Set the TV system of the TV out. |
| **Software Version** | OK | Show the software version of the camera. |
| **Send Image Size** | Full Image, Thumbnail | Full Image: Camera would automatically send original picture or video to the preset E-mail or FTP after shooting . Thumbnail: Camera would send thumbnail to mobile (by MMS), E-mail or FTP after shooting. |
| **4G Default Set** | OK | Press OK key to confirm, the 4G parameters would return to default setting (it would not return the camera parameters to default setting). |

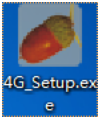
**Attention:** When the Max Sent Num/ Day is activated, the number of the file to send in one day would not exceed this setting number. When the setting number is reached, the camera would no longer send MMS, email or upload to FTP. **When the functions of intensive sending time and SMS remote control were activated simultaneously, the camera would send the all unsent picture or video of the day intensively to mobile MMS, email or upload to FTP when the SMS remote control function start the 4G module to check and receive SMS command.**

## 3. 4 Set up Camera on PC

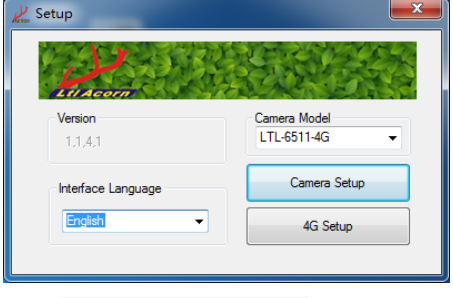
After formatting the SD card on camera, retrieve the SD card and insert into PC. The SD card reader may be needed if your PC cannot read SD card directly.

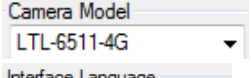
Obtain the CD from the gift box and insert into PC, the external disc drive may be needed if the PC without the disc drive. Then run the 4G-Setup.exe software from the CD.

Or download the software from website of Ltl Acorn:
http://www.ltlacorn.cn/about/downloaden.html
(Download→Classification→PC Setup→4G-Setup.exe)
Below is the icon of the 4G-Setup.exe software:

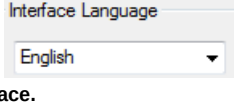



Double click the 4G-Setup.exe icon, you will see below page :




**Click** 

to choose the camera model as request.

**Click** 

**to choose the software language of the interface.**

Click 

to enter camera setting interface:

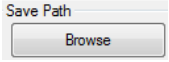
Camera Setup

| | | | |
|---|---|---|---|
| Mode | Camera | Image Size | 12 MP |
| Video Size | 720P | Picture Number | 01 Photo |
| Time Stamp | On | Sense Level | Normal |
| Side PIR | On | Video Length | 10 Sec |
| Interval | 1 Min | Date Format | MMDDYY |
| Beep Sound | On | SD Cycle | Off |
| Language | English | | |
| Set Clock | Auto | 2017 / 05 / 16 10 : 25 : 03 | |
| Timer1 | Off | Start Hour 0 : Min 0 | End Hour 0 : Min 0 |
| Timer2 | Off | Start Hour 0 : Min 0 | End Hour 0 : Min 0 |
| Serial Number | Off | 0 0 0 0 | |
| Time Lapse | Off | Hour 0 : Min 0 : Sec 0 | |

Save Path

Browse C:\Users\Administrator\Desktop

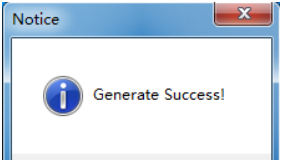
Default Generate

Set the camera as your requirements. Please refer to section **3.1 Set up Parameters on Camera** for better operation. Click 

to choose the save directory, SD card root directory is recommended (connect SD card to computer with SD card reader first).

Click 

and the below window will pop out:




Then click  to exit. A file named **menu.dat** has been created and saved in the selected directory, before inserting the SD card into camera, please copy the **menu.dat** file to the root directory of the SD card if you didn't choose SD card to save the file before.

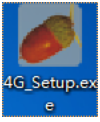
Click 

to restore to default settings, generate **menu.dat** file.

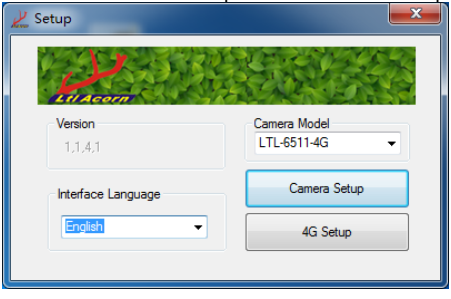
Click  to exit the setting interface. Copy the **menu.dat** file to the **root directory of the SD card,** retrieve the SD card and insert into camera. After correctly connecting the camera to the external button control box with display screen, set the switch to the ON position and enter the preview test mode. The information "Updated menu.dat Successfully" will appear on the display screen, indicating that the camera parameters have been upgraded successfully.

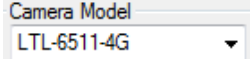
### 3. 5 Set up 4G Send Parameters on PC

Below is the icon of the 4G-Setup.exe software:

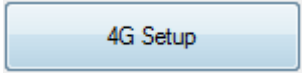


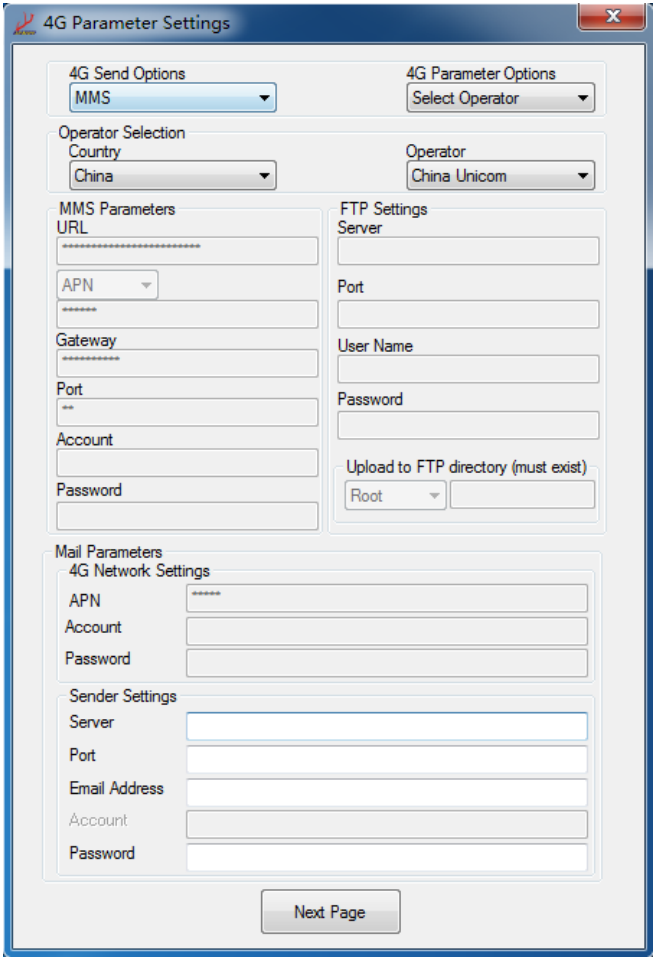

Double click the 4G-Setup.exe icon to enter Setup homepage:

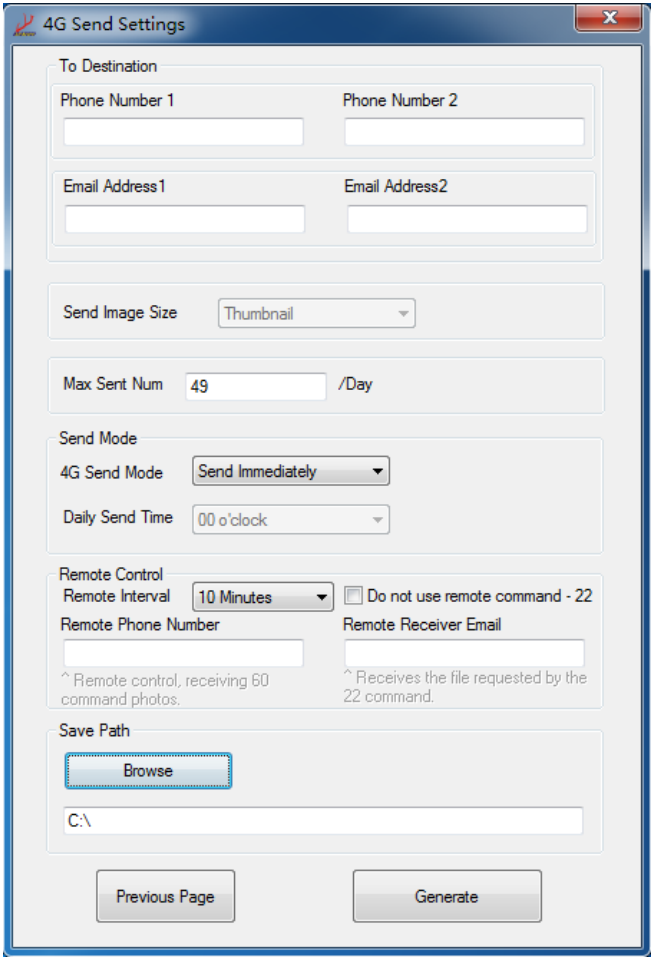



**Click**  to choose the camera model as request.



Click  to enter camera setting interface:

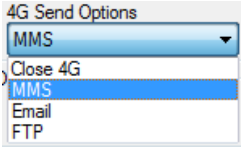

4G Parameter Settings
4G Send Options
MMS
4G Parameter Options
Select Operator
Operator Selection
Country
China
Operator
China Unicom
MMS Parameters
URL
APN
Gateway
Port
Account
Password
FTP Settings
Server
Port
User Name
Password
Upload to FTP directory (must exist)
Root
Mail Parameters
4G Network Settings
APN
Account
Password
Sender Settings
Server
Port
Email Address
Account
Password
Next Page

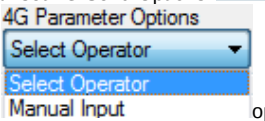

4G Send Settings
To Destination
Phone Number 1
Phone Number 2
Email Address1
Email Address2
Send Image Size
Thumbnail
Max Sent Num
49
/Day
Send Mode
4G Send Mode
Send Immediately
Daily Send Time
00 o'clock
Remote Control
Remote Interval
10 Minutes
Do not use remote command - 22
Remote Phone Number
Remote Receiver Email
^ Remote control, receiving 60 command photos.
^ Receives the file requested by the 22 command.
Save Path
Browse
C:\
Previous Page
Generate

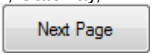
There are 2 pages of the 4G Parameter Settings, click 

to enter next page, click 

to turn to previous page when you at next page, change the 4G send setting parameters as your request in this interface, please refer to **3.3 Set up 4G Parameters on Camera** for details.

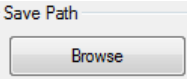
In this interface, you can set 4G Send Options 

"Email, MMS or FTP", 

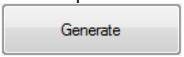
operator information of the SIM card (choose the pre-load operator or input URL, Gateway, APN and Port etc. manually) and Sender Settings, etc. Click 

to set MMS recipient number and email account, Max Sent Num/ Day, 4G Send Mode, Remote Control Phone Number, Remote Receiver Email and Remote Interval, etc.

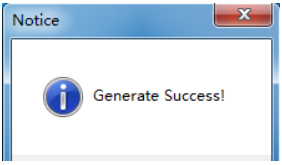
Note: If enable the function of remote control, the mobile number must be input (appointed remote control mobile number, receiving photo taken by command 60), remote control receiver email (for receiving the file requested by command 22).

After finishing the setting, please click 

to choos the directory to save the file, SD card root directory is recommended (connect SD card to computer with SD card reader first).

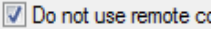
Click 

and the below window will pop out.




Then click  to exit. A file named **CFG.BIN** has been created and saved in the selected directory, before inserting the SD card into camera, please copy the **CFG.BIN** file to the root directory of the SD card if you didn't choose SD card to save the file before.

Click  to exit the setting interface. Copy the **CFG.BIN** file to the **root directory of the SD card,** retrieve the SD card and insert into camera. Connect the camera to the external button control box with display screen, set the switch to the ON position and enter the preview test mode. The information ***Updated 4G config Successfully*** will appear on the display, indicating that the camera parameters have been upgraded successfully.

Note:4G send option is MMS and open the remote control function, the remote control phone number must be entered. Check the 

.
Then there's no need to enter the remote receiving mailboxes and outbox settings, also allowing the generation of **CFG.BIN** files. (When 4G send option is the mailbox or FTP, enter the outbox settings.)

## 3. 6 Instruction of Mobile Setup Software

For the convenience of users, our company made Setup software for Android and iPhone mobile. The two software can be used the same as the PC Setup software to modify the camera settings, 4G send parameters and then generate configuration files, copy the configuration files to the SD card for updating camera parameters. You can also use the software to setup parameters on mobile and send the command directly to the camera.

Download and install Android mobile setup APP
Obtain the CD from the gift box and insert into PC to read Setup.apk software, then copy the software to mobile by USB cable or other ways and install it.
**Note: The external disc drive is needed if the PC is without the disc drive.**
Or download the software from website of Ltl Acorn:
http://www.ltlacorn.cn/about/downloaden.html
(Download→Classification→APP→4G_Setup)
Then copy the software to mobile with the provided USB cable or with other method and install it.
The software is named “Super Ltl”, applying to the mobile and PC with android system version Android 4.0 or later.

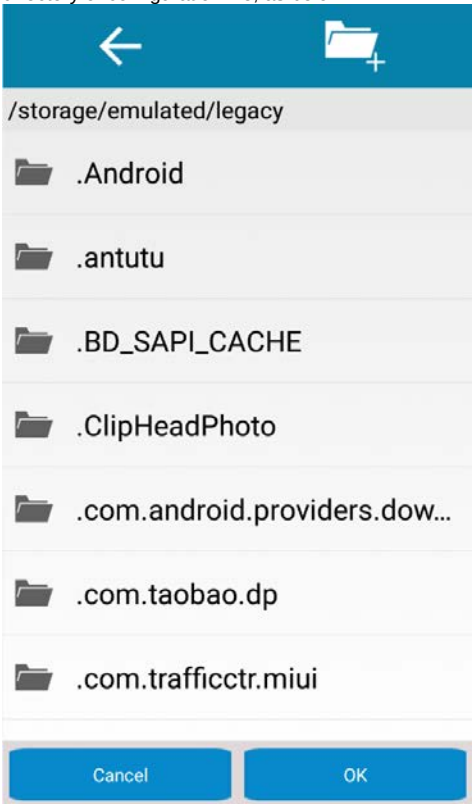
Below is the icon of the Setup software:


Click the icon to enter the interface:

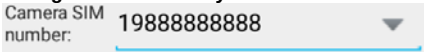

Click ***Camera*** to choose the model as request.

Click ***Directory*** 

to choose the saving path of the configuration file. Or use the default-generated saving path by the mobile, different mobile may generate different default path, but all would be saved in ***Ltl Acorn***.
Click the blank of **Directory** to popup the interface to choose saving directory of configuration file, as below:

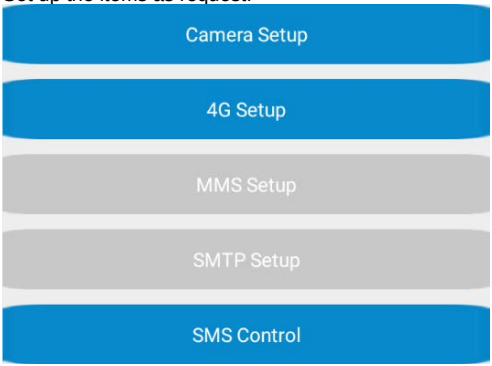


**Attention: Please remember the setting directory for searching configuration file easily.**



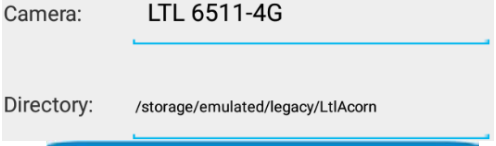

Click **Camera SIM** to input the SIM card number

Set up the items as request.



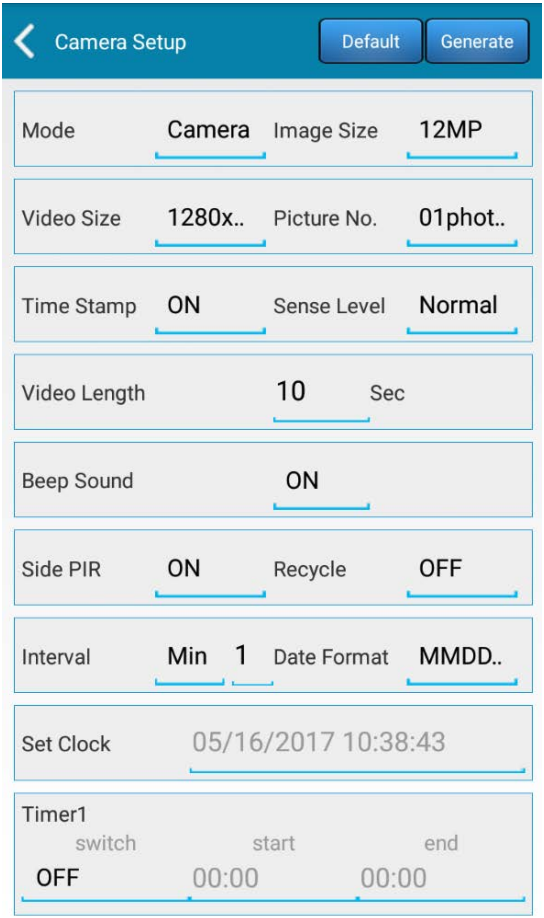

## 3. 7 Set up Camera Parameters on Mobile

Enter the setup software on mobile, choose the camera model as LTL 6510-4G in the main interface.



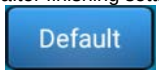

Click 

in the main interface to enter the interface of camera parameters setting:

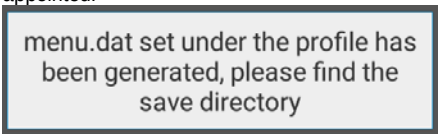



Set the parameters as request, please refer to section **3.1 Set up Parameters**

**on Camera.** Click 

after finishing setting, you will see below prompt message. Also you can click 

to obtain default setting. A file named **menu.dat** would be created and saved in the folder appointed.

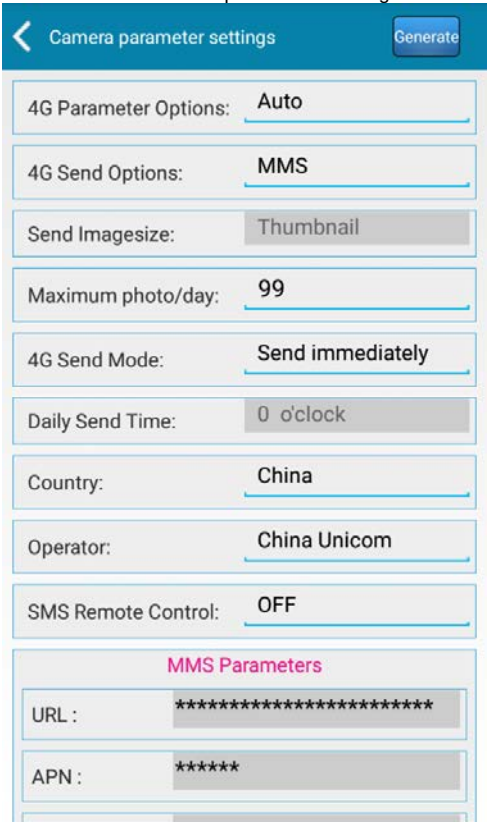



Copy the parameters setting file to the root directory of SD card in camera and install it. Connect the camera to the external button control box with display screen, set the switch to the ON position and enter the preview test mode. The information "Updated menu.dat Successfully" will appear on the display, indicating that the camera parameters have been upgraded successfully.

### 3. 8 Set up 4G Send Parameters on Mobile

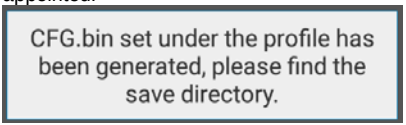
Click 

in main interface to enter the interface of 4G parameters setting:



Set the 4G parameters as request, please refer to **3.3 Set up 4G Parameters on Camera**. Click 

to pop out below prompt message, a file named **menu.dat** would be created and saved in the folder appointed.

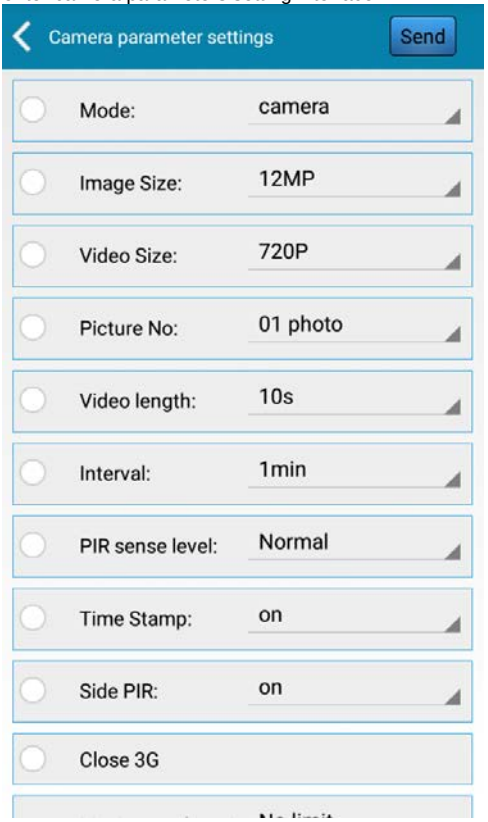



Copy the 4G parameters setting file generated to the root directory of SD card in camera and install it. Connect the camera to the external button control box with display screen, set the switch to the ON position and enter the preview test mode. The information " ***Updated 4G config Successfully*** " will appear on the display, indicating that the camera parameters have been upgraded successfully.

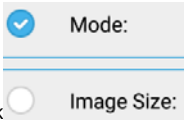
### 3. 9 Mobile Remote Control

Click 

in the main interface to enter camera parameters setting interface:



You can set the camera parameters and 4G working status in this interface, please refer to **3.1 Set up Parameters on Camera** and **3.12 SMS Remote Control & Table of Command Code.**



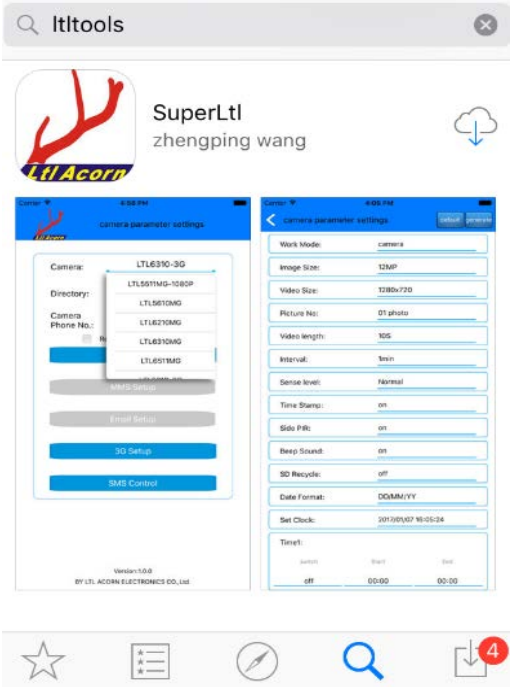

Click to tick the circle in the left side, tick means the setting need to be generated to SMS command and send; blank circle means unselected, which will not generate menu settings to SMS command and send after setting Click 

after finishing setting, generate the setting menu content to mobile SMS command, send to the SIM card number on camera directly for remote control.

**Attention: When sending SMS command to control camera on mobile setup software, please make sure the camera is in ON mode, MMS module is working well and SIM card number in camera is filled,eg:**

## 3. 10 Instruction of iPhone Mobile Setup Software

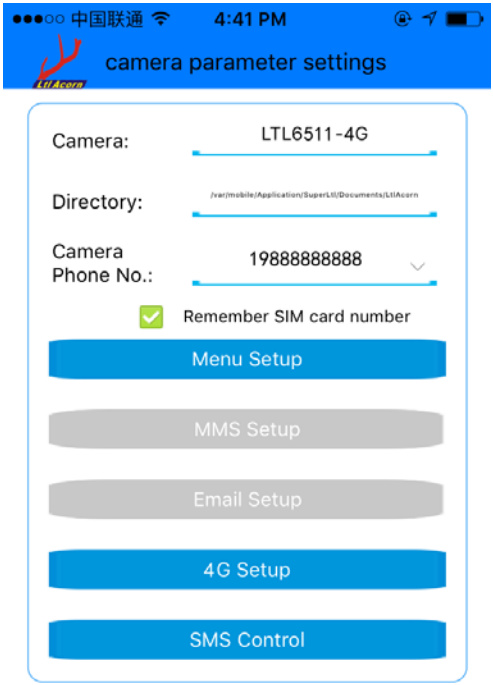
Download and install iPhone mobile setup APP
You can input keywords ‘Super Ltl’ or “Ltl Acorn” in App Store to search the APP on your iPhone, download and install directly.




Below is the icon of setup software:

The software named “Super Ltl”, applies to full series iPhone mobile and iPad Pro.

Click the icon to enter the interface:




**The operation of iPhone version software is the same with Android mobile version, for more details please refer to the section 3.6, 3.7, 3.8, 3.9 and 4.3 of user manual.**

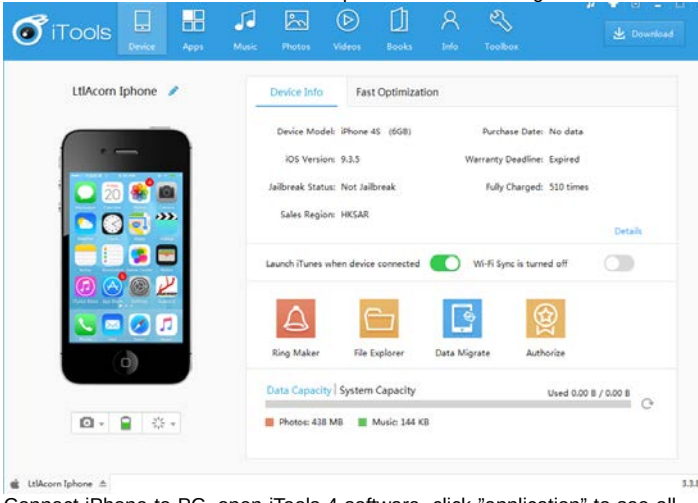
**Note: The “save directory” in the main interface can’t be modified as Android version.**

### 3. 11 Obtain Configuration File Generated by iPhone Setup Software

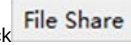
Click 

to generate the configuration file after setting the camera parameters on the iPhone version setup software. The generated configuration file is saved in the folder Documents/Ltl Acorn of mobile application Super Ltl. Connect iPhone to PC with USB cable, enter the folder named LtlAcorn by the way of file sharing, finding the configuration file and copy to the SD card. You can also connect iPhone to the dedicated card reader to copy the configuration file directly.

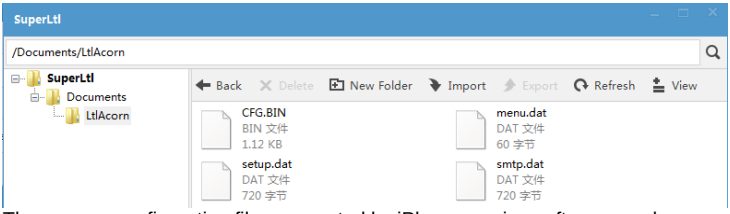
Take the iTools 4 software as an example to obtain the configuration file:




Connect iPhone to PC, open iTools 4 software, click ”application” to see all applications installed on mobile.


Find “superltl” in the applications and click 

, popup the folder window.




The camera configuration files generated by iPhone version software can be seen when open folder Documents/Ltl Acorn in this interface.

## 3. 12 SMS Remote Control & Table of Command Code

In order to communicate well with your camera via text message/SMS, format your texts and send in a certain way is needed. Or please download the mobile APP to send command, it would be easier.

- All the SMS commands should start with “LTL(ltl)” and end with “AA(aa)”.
- Between “ltl” and “aa”, insert the specific commands you want the camera to perform. You can choose one command at a time, but it saves time to combine commands to send together.
- A specific command is made up with four parts in the following sequence: a two-digit command code, an asterisk (*), a code value (a number or a combination of number and letter), and lastly a pound/hash sign (#).
- Both capitalized and non-capitalized letters can be used in a same command.
- Do NOT leave any spaces between any of the letters and symbols.
- Do NOT put a comma or period in the command. Do NOT include any quotation marks in a command; they are used here just for explanation purposes.
- The maximum for text messages is 60 bytes. If you want to send multiple commands, please do so in separate texts to avoid failure sending.

An example of a command: LTL01*0#02*2#06*S30#07*10A3Z#60*1#AA
It means to ask the camera to 1) be in camera mode and take only pictures, 2) set image size to 2MP, 3) take pictures with an interval of 30 seconds, 4) turn on serial number and set it to “0A3Z”, and 5) immediately take a picture and send it to you.

- For SMS remote control interval, different value with different

power consumption: “0” the highest and “off” zero.

- Camera will reply you message as below format when your SMS command is in correct format and received:
  Message "LTL..." format OK.
  SQ10,R1,G1.

Attention: The content in the replied message in quote marks ("…") is the front part of the SMS command due to message length limitation.
SQ10 means signal strength is 10 (MAX: 31).
R1 indicates the network registration and status: 0: didn’t register the network and the module didn’t find the operator; 1: registered to the local network; 2: found the operator but didn’t register the network; 3: the registration was rejected; 4: unknown data; 5: the registration is in roaming status;
G1 indicates the status of data network registration, 1 and 5 means the data network can be used, otherwise means the exception of data network registration, it cannot be used.

**Table of Command Code**

| Command Code | Function of Command Code | Example | Meaning |
|---|---|---|---|
| 01 | Mode: Camera (0), Video (1), Camera+ Video (2) | 01*1# | set to video mode |
| 02 | Image Size: 12MP (0), 5MP (1), 2MP (2) | 02*1# | 5MP |
| 03 | Video Size: 1080P (0), 720P (1), VGA (2) | 03*1# | 720P |
| 04 | Picture Number: 01 Photo (0), 02 Photos (1), 03 Photos (2) | 04*2# | 3 photos |
| 05 | Video Length: 1-60 indicates value of second | 05*59# | 59 seconds |

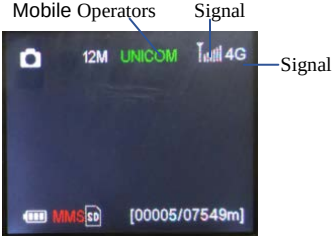
| | | | |
|---|---|---|---|
| 06 | Interval: beginning with S(s) represents second, with M(m) represents minute, 1-60 indicates different value | 06*s30# | Interval: 30 seconds |
| 07 | Serial Number: Off (0), turn off serial number 07*0xxxx#; On (1), refer to camera setting, digit+ letter. | 07*1ABCD# | Serial Number: ABCD |
| 08 | Sense Level: Low (0), Normal (1), High (2), Off (3) | 08*1# | Normal |
| 09 | Time Stamp: Off (0), On (1) | 09*0# | Off |
| 10 | Side PIR: Off (0), On (1) | 10*1# | On |
| 11 | 4G Send Status: Off (0) | 11*0# | Close 4G |
| 12 | Recipient Phone Number 1: Maximum 48 types | 12*19888888888# | Phone Number: 19888888888 |
| 13 | Recipient Phone Number 2: Maximum 48 types | 13*19888888888# | Phone Number: 19888888888 |
| 14 | Recipient Email 1: Maximum 48 types | 14*info1@ltlacorn.cn# | Email Address: info1@ltlacorn.cn |
| 15 | Recipient Email 2: Maximum 48 types | 15*info2@ltlacorn.cn# | Email Address: info2@ltlacorn.cn |
| 16 | Remote Receiver Email (receive full size picture of command code 22): Maximum 48 types | 16*info@ltlacorn.cn# | Email Address: info@ltlacorn.cn |
| 17 | Max Sent Num/ Day: 1-999 | 17*22# | Send max 22 photos per day. |

| | | | |
|---|---|---|---|
| 18 | Time Lapse: Off (0), On (1). Time indicated with 2 digits, e.g.: 1 Hour 30 Min 0 Sec, indication: 013300. | 18*1013000# | The camera takes photo/video every one and a half hour no matter triggered or not. |
| 19 | Timer1: Off (0), On (1). Time indicated with 2 digits, e.g.: 13 Hour 30 Min, indication: 1330. | 19*113301530 # | Camera works at 1:30pm ~3:30pm |
| 20 | Timer1: Off (0), On (1). Time indicated with 2 digits, e.g.: 13 Hour 30 Min, indication: 1330. | 20*113301530 # | Camera works at 1:30pm ~3:30pm |
| 21 | Remote Interval: 0-24, 0 indicates interval of 10 minutes, 25 indicates Off. 1-24 indicates interval time to receive SMS command. | 21*25# | Off ( need to turn on manually after turning off) |
| 22 | Request Full Image: camera will send the full size picture to recipient email address after receiving the command. * is followed with the folder name which the file existed\file name (note: folder and file name must be capital letter). | 22*100IMA4G\ IMAG0001.JP G # | Request full size picture “100IMA4G\IMAG 0001.JPG” |
| 23 | Size of sending picture: 0 for full size picture; 1 for thumbnail; | 23*0# | Send full size picture |

| | | | |
|---|---|---|---|
| | valid in FTP or email mode only; | | |
| 60 | Get the camera to take picture immediately and send to your remote control mobile, On (1).<br>This code is workable in these mode: Camera, Video,<br>Camera + Video | 60*1# | The camera would take a picture immediately and send to the remote control mobile number after receiving the SMS command. |

### 3. 13 View Local MPNO Name and Signal Strength on TFT Screen

Connect the external button control box with display screen to the camera and switch to ON mode and wait about 1 minute till you hear a short beep, then you will be able to see the MPNO symbol and the signal strength on the LCD.




To make sure the MMS module works well, at least two bars of signal are required. If there is only one bar of the signal, it may not assure the MMS works well.

If a code other than the MPNO symbol shows up on the screen, it

indicates something is wrong. Specifically as:

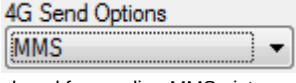
- **No SIM:** No SIM card or installed incorrectly
- **WAIT..:** Searching signal or no signal received.
- **ErCxGx:** Error of network registry, please check if SIM card is password-protected, deactivated due to low balance in the account, or the signal is too poor.
- **NO MDM:** 4G module is not found or detected.

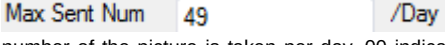
## 3. 14 Features and Working Condition of 4G Wireless Module

Ltl-6511-4G is able to take picture or video automatically and send to mobile, E-mail or FTP when works with 4G wireless module, also you can send SMS command to control the camera remotely and modify the camera parameters. It with below features when camera works with 4G wireless module:

- ✧ Through 4G network, send the original size of the photos and video files shooted by the camera to the user's mailbox (less than 10MB, if the video files are more than 10MB, the camera will automatically segment the video file into less than 10MB file) or FTP.
- ✧ High speed of transmission: It costs less than 1 minute from triggering to finishing sending 1.5M size photo to email, less than 2 minutes from shooting 1080P video for 10s to finishing sending to email.
- ✧ Save 4G traffic: support to send thumbnail to mobile, E-mail or FTP by MMS.
- ✧ 4G send options: 1. Send immediately after shooting. 2. Send all unsent picture at the specified time intensively, the 4G module is working at the sending time only to reduce power consumption greatly.
- ✧ Supports to send SMS commands to 4G module to modify the camera parameters and trigger remotely.
- ✧ Send SMS command to module to get original picture sent to E-mail refer to the thumbnail received on mobile.
- ✧ SMS remote control function is realized by timing wakeup to the 4G module, SMS wakeup interval could be set as 10 minutes or 1 ~ 24 hours, the shorter of the interval, the faster of command responding, but more power would be consumed.
- ✧ Supports to power off the module by camera setting when the 4G function is not in using, it won't consume any additional power and would work as the basic camera without 4G function.

4G communication of Ltl-6511-4G is working with below conditions:

- Camera switch is in On mode and camera is functioning well. SD card has enough storable capacity. Correct installation and enough power of batteries. MMS sending by timing or triggering should be workable in Camera mode or Cam+ Video mode only, not in Video mode. When the camera is performing the remote control, MMS sending is workable in Camera, Video and Cam+ Video mode by sending SMS command code 60 to the module.
- The SIM card supports 4G LTE has been installed. SMS, MMS and data traffic service are activated (some MMS services need pre-paid balance in the account).The SIM card is not password-protected.
- The signal is sufficiently strong in the field.
- The SMS sending number should be the same with the phone number set on camera, or the camera will not accept the command.
- MMS/email parameters and email password should be correct.
- If you have the Timer on, please make sure the specified time of timer is in the period of MMS sending.
- 

Make sure the 4G Send Options is not closed for sending MMS picture.
- 

49 indicates the number of the picture is taken per day, 00 indicates no limit. You can choose other number for the limitation of MMS sending. If the daily limit has been reached, you can reset it on PC or external button control box with display screen, or wait the camera to count it from 1 at next day.
- The camera is stationary while working.

# FTP Uploading Function

Ltl-6511-4G with newly added FTP upload function, it is able to upload the picture or video to the appointed FTP site. When you use this function, please set the FTP parameters first and switch camera to ON mode, then the camera will automatically take picture or video and upload as preset.

## 4. 1 Setup FTP Parameters on Camera

After correctly inserting the external button control box with display screen, battery and SD card, set the camera switch to the ON position, and enter the preview test mode after the camera is turned on, press ◄ to enter 4G setting menu. Press ▲ and ▼ key to choose the menu "4G Send Status", press ◄ to enter "4G Send Status", then press ▲ and ▼ key to choose "FTP", the FTP parameters can be set.
The FTP menu is as below:

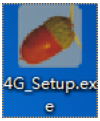
| Parameters | Setting | Description |
|---|---|---|
| **Set Parameters** | Server, Port Account, Password | Set parameters of FTP site. |
| **Upload to FTP Catalogue** | Root Catalogue, Appointed Catalogue | Root Catalogue: upload the files to root catalogue of FTP site directly.<br>Appointed Catalogue: upload the files to appointed catalogue of FTP site directly and input name of appointed catalogue. |

**Note: The specify directory should have existed.**

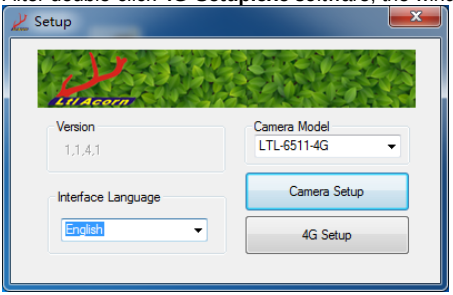
## 4. 2 Set up FTP Parameters on PC

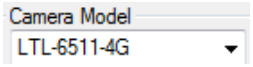
After formatting the SD card on camera, retrieve the SD card and insert into PC. The SD card reader may be needed if your PC cannot read SD card directly.

The software **4G-Setup.exe** icon is as below:

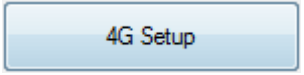


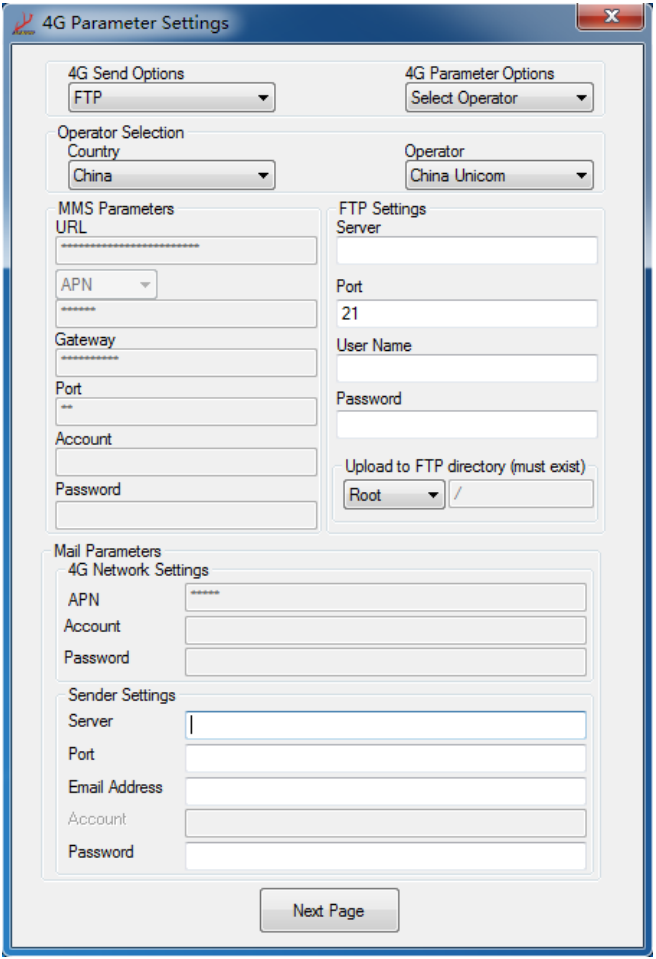

After double-click **4G-Setup.exe** software, the window appears below:

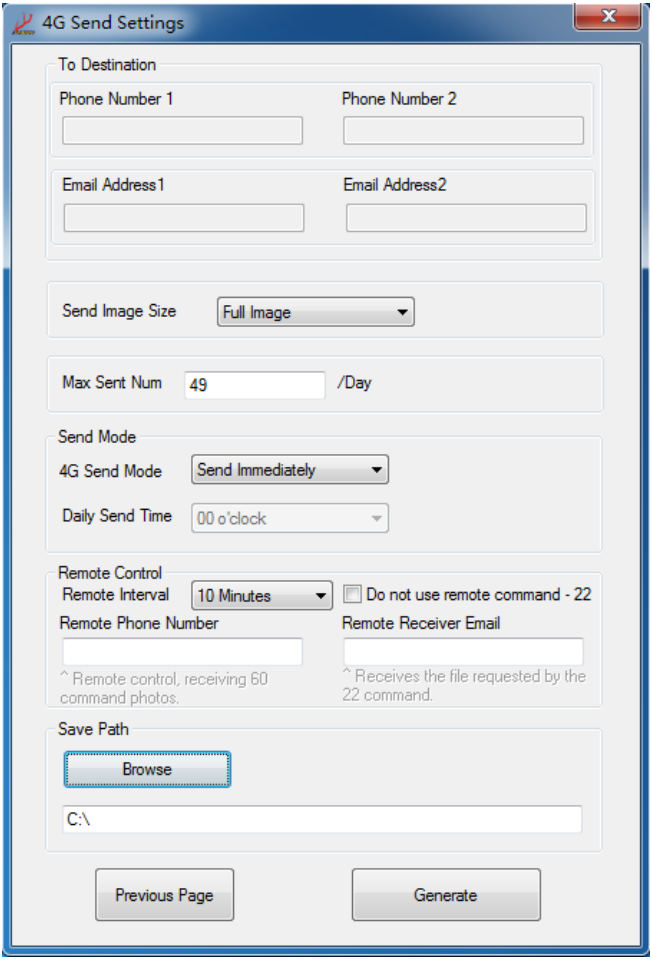



**Click**  to choose the camera model as request.



Click  to enter camera setting interface:


4G Parameter Settings
4G Send Options
FTP
4G Parameter Options
Select Operator
Operator Selection
Country
China
Operator
China Unicom
MMS Parameters
URL
APN
Gateway
Port
Account
Password
FTP Settings
Server
Port
21
User Name
Password
Upload to FTP directory (must exist)
Root
/
Mail Parameters
4G Network Settings
APN
Account
Password
Sender Settings
Server
Port
Email Address
Account
Password
Next Page

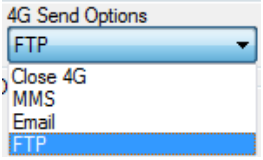

4G Send Settings
To Destination
Phone Number 1
Phone Number 2
Email Address1
Email Address2
Send Image Size
Full Image
Max Sent Num
49
/Day
Send Mode
4G Send Mode
Send Immediately
Daily Send Time
00 o'clock
Remote Control
Remote Interval
10 Minutes
Do not use remote command - 22
Remote Phone Number
Remote Receiver Email
^ Remote control, receiving 60 command photos.
^ Receives the file requested by the 22 command.
Save Path
Browse
C:\
Previous Page
Generate

4G parameter settings interface has two pages, click 

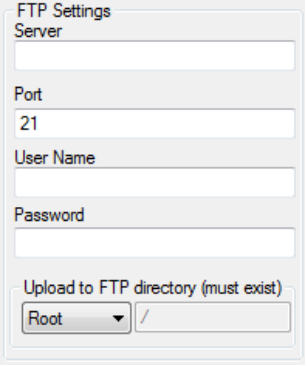
to turn to next page, click 

to turn to the previous page.

Select “4G Send Options” as “FTP” in ”4G Parameter Settings” window:




Set up “Server”, “Port”, “User name” and “Password” in “FTP Settings” and the FTP directory for uploading.



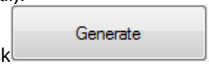

Set up “Sending Image Size”, “Max Sent Num”, “Send Mode”, “Save Path” and remote control parameters in the window of “4G Send Settings”.

Note: If enable the function of remote control, the mobile number must be input (appointed remote control mobile number, receiving photo taken by command 60), remote control receiver email (for receiving the file requested by command 22).

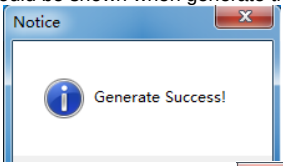
After that, click 

to switch to the “4G Parameter Settings” window, set MMS parameters (command 60 to send photos to remote control mobile by MMS) and email parameters ( the file requested by

command 22 sent by email).

After finishing setting, click 

, the below prompt window would be shown when generate the file successfully:

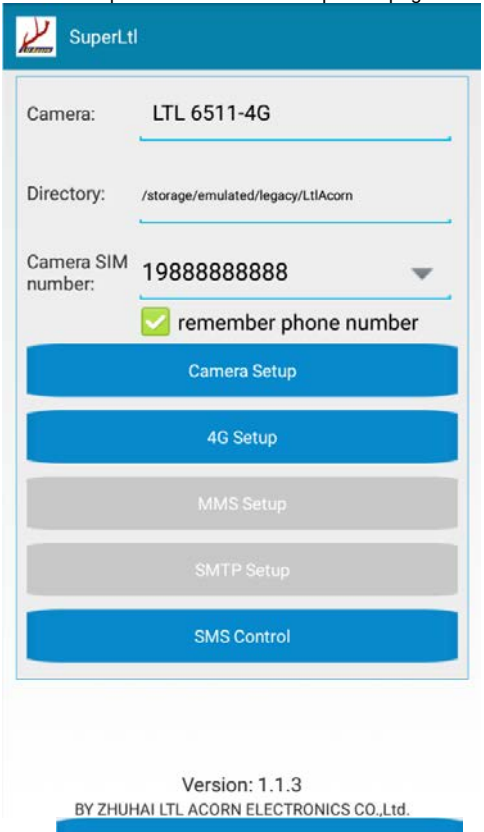



Please click the close button  in top right corner of the window to close the window.

After copying the **CFG.BIN** file to the root directory of SD card on PC, retrieve the SD card with **CFG.BIN** copy file and insert into camera. Connect the camera to the external button control box with display screen, set the switch to the ON position and enter the preview test mode. The information " **Updated 4G config Successfully** " will appear on the display, indicating that the camera parameters have been upgraded successfully.

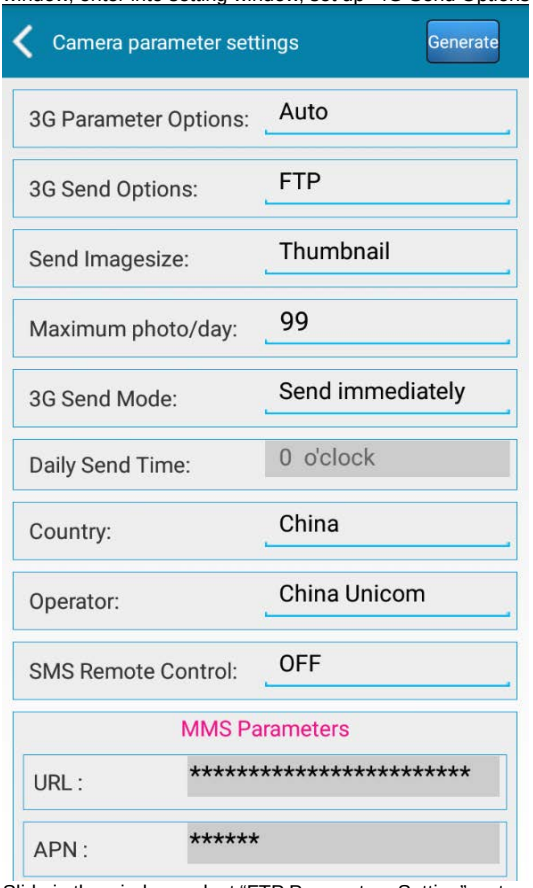
## 4. 3 Set up FTP Parameters on Mobile

Click the SuperLtl icon to enter Setup homepage:




Click  button in the main

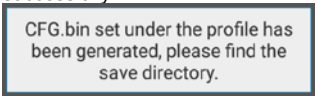
window, enter into setting window, set up “4G Send Options” as “FTP”.




Slide in the window, select “FTP Parameters Setting”, set up “Server”, “Port”, “User Name”, “Password” and the FTP directory for uploading file.


After finishing setting, click the top 

button of the window, below prompt window would be shown when generate configuration file successfully:




After copying the **CFG.BIN** file to the root directory of SD card on PC, retrieve the SD card with **CFG.BIN** copy file and insert into camera. Connect the camera to the external button control box with display screen, set the switch to the ON position and enter the preview test mode. The information " **Updated 4G config Successfully** " will appear on the display, indicating that the camera parameters have been upgraded successfully.

**Note: Support SMS remote control while select FTP function.**
The supplementary instruction of two commands of SMS remote control.

1. Command 22 request full size picture (original file), which is request to send the original file of appointed name to the remote control receiver email. E.g.: "**22*100IMA4G \IMAG0001.JPG #**" is uploading **IMAG0001.JPG** photo in the **100IMA4G** folder. The "**.JPG**" in the command can also be "**.AVI**", then it can request for uploading video file.
2. Command 60 controls the camera taking a photo and sending thumbnail to remote control mobile by MMS.
   The sending mode of these two commands is stationary.

# LTL-6511-4G Series Products

Ltl-6511-4G is the latest 4G wireless communication camera, with 4G wireless communication module of high communication capability and high transmission speed. Infrared LED light 850 light (visible) and 940 light (invisible) are for optional. Standard lens series camera of 55 degrees and wide angle lens series camera of 100 degrees are for optional.

## 5.1 Ltl-6511-4G series model:

**Ltl-6511-4G(EXT.LCD)**

**1.Ltl-6511-4G(EXT.LCD) Camera (55 degrees standard lens)**

**2.Ltl-6511W-4G(EXT.LCD) Camera (100 degrees wide angle lens)**

**Note: The camera can only enter the ON mode and OFF when the camera is not connected to the external button control box with display screen. After the camera is connected with the external button control box with display screen, the switch can be set to the ON mode and enter the test mode.**

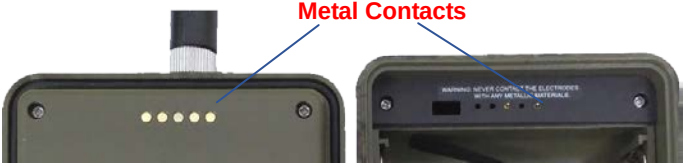
# IMPORTANT INFORMATION

## 6. 1 Power Supply

Ltl-6511-4G Series scouting camera works on electricity up to 12 voltages. The 4 AA batteries in the bottom of the camera, 6 cells of 18650 lithium batteries in the battery box and the external power supply form a three-path parallel circuit, each path is isolated from others and does not charge or discharge others. So it is easy to connect with external solar power supply of 6V~12V. If you use our company's LTL-SUN solar charger, while loading the fully charged battery, the camera can greatly extend the working hours. The camera needs to check the battery regularly for long time working to avoid the battery leakage to damage the camera.

## 6. 2 Prevent From Short-Circuits

There are conductive metal contacts on camera unit and battery box, to avoid short circuit to damage the camera, please NEVER contact these conductive metal contacts with any metallic materials.




## 6. 3 SD Card

There are various brands of SD cards on the market. We tested on our camera as many brands as we can. However, we cannot guarantee every brand will be compatible with our camera. Please format the SD card on the camera if the damaged photo is taken. If it doesn't work well, please try another brand.

## 6. 4 Auto Adjustment on Video Length

In order to extend the battery's life, the camera can operate 30% more than the number of video clips captured by similar products in the video mode or in the camera + video mode through technical improvements. When the battery is low energy, the camera can automatically shorten the length of each video taken to maximize the number of animal fragments taken. Therefore, our LTL ACORN infrared induction self timer camera can take more 2~3 times than the similar products, so that users can obtain more useful information.

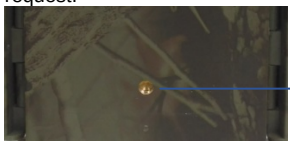
**Attention:** The camera performs at extreme cold environment as low as -45°C (-49°F), in which the battery power capacity deteriorates drastically. Therefore, the number of video clips decreases accordingly.

## 6. 5 850nm and 940nm IR LED

There are two types of IR LED for optional of Ltl-6511-4G series scouting camera, 850nm and 940nm. For Ltl-6511-4G series (standard angle lens), 850nm provides flash distance up to 115 feet/ 35m whereas 940nm up to 59 feet/ 18m. For Ltl-6511W-4G series (wide angle lens), 850nm provides flash distance up to 98 feet/ 30m, 940nm up to 42 feet/ 13m.
The benefit of 940nm IR LED, however, is it emits black flash that is almost invisible in the dark.

## 6. 6 Mount on Tripod

The camera can be mounted on a 1/4" tripod. The detailed operation: align the bolt at the top of tripod to the screw hole on the back of battery box and tighten it, then adjust the shooting view angle of camera as request.



**Screw Hole on Battery Box**

## 6.7 FAQs on 4G MMS Function

- **The camera stops sending MMS to the pre-set mobile number suddenly:** Please check if the SIM card balance is enough and local signal is well, if the operator sets limits to the number of MMS sending or if the mobile number was blacklisted.
- **It takes so long to receive MMS picture or cannot receive:** The signal is too weak or the batteries is near to be ran out.
- **Set the camera to have burst shooting, but some pictures were not sent:** The camera is able to send MMS constantly, but if the signal is too weak, it may not work stably.
- **Receive partial image or some is incomplete:** The camera was in motion when sending pictures. Or the signal was unstable. Besides, the SD card may be damaged.

## 6.8 Low Battery Alert

The camera shows the battery level on each MMS picture. When the battery level is high, a code B3 shows on the bottom left corner of the image. After the battery level drops, the code changes to B2. When the battery level gets very low, the code changes to B1, which means it's time to change the batteries. So you can decide when to change batteries.

## FIRMWARE UPGRADES

The manufacturer reserves the right to upgrade the camera firmware and 4G module program, please consult with the local distributor for the website to download the program.
Make sure the camera with enough power before upgrade to avoid the unsuccessful upgrade or the fault caused by low battery after upgrade. Please follow below instruction to upgrade:

**Prepare SD card**

- Connect the SD card to camera and back up the SD card contents to computer (SD card reader may be needed).
- Retrieve the SD card from computer, insert it into camera and load batteries.
- Format the SD card on the camera.

**Upgrade camera firmware**

- Remove the SD card from the camera and connect the computer. Copy the camera program FW6511-4G.bin to the root directory of the SD card. (The effective download address of the camera program to ask the local product dealer) to SD card write protection switch to the LOCK position, and then insert the camera.
- Connect correctly the camera to the external button control box with display screen and keep pressing the left button. Set the switch from the OFF position to the ON position. The information "**Update Firmware Successfully**" is shown on the display screen after the camera is turned on. Release the left button, then press the menu button to enter the menu to move to the factory settings. Press the OK button to confirm.
- Retrieve the SD card and unlock it, then re-insert into camera and format it. The upgrade will have been finished successfully.

**Attention: The upgrade program of Ltl-6511-4G is not compatible to other models. In other word, an upgrade for Ltl-6511-4G only applies to Ltl-6511-4G model. If a camera is accidently upgraded by running a non-compatible program, it will quit working and needs to be sent back for repair. This issue is not covered under warranty.**

**Upgrade 4G module program**

- Copy the program file testsim to the root directory of the SD card.
- Retrieve SD card from computer and insert into camera.

- Set the “4G Send Status” as “MMS” or “Email”, “4G Send Mode” as “Send Immediately”, input the remote mobile number (to receive message of finishing upgrade).
- Switch the camera to ON mode and trigger it to take picture. The module would be activated after shooting and start the upgrade. The file testsim would be deleted after the upgrade is finished, then the module would send the message of upgrade successfully to the remote mobile number.

## LIMITED WARRANTY

We take great pride in our products. We always stand behind our promises. We provide leading warranty term and service. Every LTL ACORN trail camera comes with a limited times warranty.

We guarantee our trail cameras to be free of defects in materials and workmanship under normal use and service for a period of a limited time after the registered date of purchase. This warranty does not cover damages caused by misuse, abuse, or improper handling or installation, by user installed batteries, or by repair attempts of someone other than our authorized technicians.

In the event of a defect under this warranty, we will, at our option, repair your camera or replace it with the same or comparable model free of charge, provided the product is returned postage paid. This warranty only extends to the original retail buyer from our authorized dealer. Purchase receipt or other proof of the date of the original purchase is required to receive warranty benefits. The warranty on any replacement product provided under the original warranty shall be for the remaining portion of the warranty period applicable to the original product.

This warranty extends solely to failures due to defects in materials or workmanship under normal use. It does not cover normal wear of the product.

Please contact our tech support department to determine the nature of the problem before you return a LTL ACORN product under this warranty for repair or exchange.

## Appendix I: TECHNICAL SPECIFICATION

| Model | Parameters |
|---|---|
| **Image Sensor** | 5 Mega Pixels Color CMOS |
| **Lens** | FOV=55°; Auto IR-Cut |
| | FOV=100°; Auto IR-Cut |
| **IR Flash** | 940nm (55 degrees standard lens flashes 18 meters/ 59 feet) |
| | 940nm (100 degrees wide angle lens flashes 13 meters/ 42 feet) |
| | 850nm (55 degrees standard lens flashes 35 meters/ 115 feet) |
| | 850nm (100 degrees wide angle lens flashes 30 meters/ 98 feet) |
| **Auto IR Adjustment** | Automatically adjust brightness of IR LED in black and white video, reduce current after about 10s to lower power consumption. |
| **External button control box with display screen** | (2.4"); 960(RGB)*240DOT;16.7M Color, 6 keys |
| **Memory Card** | SD Card (8MB~32GB) |
| **Picture Size** | 12MP(4000x3000), 5MP(2560x1920), 2MP(1600x1200) |
| **Video Resolution** | 1440x1080: 15 fps ;1280x720: 30fps; 640x480: 30fps; |
| **PIR Sensitivity** | High/ Normal/ Low/ Off |
| **PIR Sensing Distance** | 13~15meters (below 25℃ at the Normal sensitivity) |
| **Prep PIR Sensing Angle** | Left and right light beams form an angle of 100°; Each lens covers 10° |
| **Main PIR Sensing Angle** | 55° |
| **Operation Mode** | Day/ Night |
| **Trigger Time** | 0.8 Seconds |
| **Trigger Interval** | 0sec - 60min; Programmable |

| | |
|---|---|
| **Photo Burst** | 1~3 |
| **Video Length** | 1-60sec.; Programmable |
| **Camera + Video** | First take Picture then Video |
| **Playback Zoom In** | 1~16 Times |
| **Time Stamp** | On/Off; Include serial No., temperature, moon phase, date and time. |
| **Timer1** | On/Off; Programmable |
| **Timer2** | On/Off; Programmable |
| **Password** | 4 Digits (0~9) |
| **Serial No.** | 4 digits and alphabets (0~9, A~Z) |
| **Time Lapse** | Off/ On; 0 Sec~23 Hour 59 Min 59 Sec; Programmable |
| **Beep Sound** | On/ Off |
| **SD Cycle** | On/ Off |
| **4G Send Options** | MMS, E-mail, FTP, Close 4G= does not send MMS/Email/FTP; Programmable |
| **Max Sent Num/ Day** | 1~999/ Day |
| **MMS Recipient Phone Number** | 1~2 Phone Numbers |
| **MMS/Email Recipient E-mail Address** | 1~2 E-mail Addresses |
| **Sender E-mail** | 1 Sender E-mail Address |
| **Remote Control** | 1 Remote Recipient Phone Number, 1 Remote Receiver E-mail |
| **Recipient FTP Setting** | 1 FTP Server Setting |
| **Power Supply** | 4 x AA, 6 x 18650 Lithium Battery |
| **External DC Power Supply** | Plug Size: 4.0mmx1.7mm<br>DC 6 ~ 12V (2 ~ 1A) |
| **Stand-by Current** | 0.06mA |

| | |
|---|---|
| **Stand-by Time** | 3 year (4 x AA, 6 x 18650 Lithium Battery) |
| **Auto Power Off** | Auto power off in 3 minutes without any operation in TEST mode. |
| **Power Consumption** | 180mA (+620mA when 940nm IR LED lights up) |
| **Interface** | TV out; C TYPE External Control Box Socket; SD Card Slot; SIM Card Slot; 6V DC External |
| **Mounting** | Strap; Tripod；Conical Plastic Pillar |
| **Ingress Protection** | IP66 |
| **Working Temperature** | -45℃ ~ +70℃ |
| **Working Humidity** | 5% ~ 95% |
| **Certificate** | FCC & CE & RoHS |

## Appendix II: PACKAGE CONTENTS

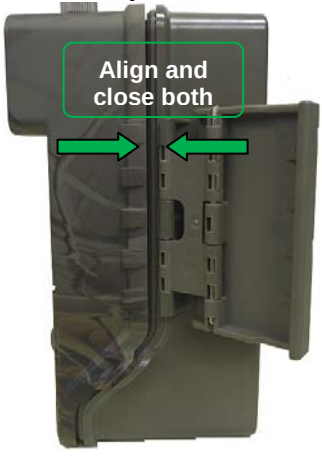
| Part name | Quantity (PCS) |
|---|---|
| Digital Camera | 1 |
| External button control box with display screen | 1 |
| TV AV IN Cable | 1 |
| USB Cable | 1 |
| Strap | 1 |
| External DC Power Cable (Optional) | 1 |
| CD | 1 |
| Warranty Card | 1 |
| User's Manual | 1 |

**Note: About the external button control box with display screen, users can choose to buy or not. About the part of the battery(ordinary AA alkaline batteries and 18650 3.7V lithium battery), consumers need to buy on their own.**

## Appendix III: Illustration of Battery Box Installation

**1、Load 6 cells of 18650 lithium battery in battery box.**


**2、Close the camera with battery box.**



**3、Hook camera body with two lock buckles on side of battery box.**


**4、 Snap on lock buckles.**

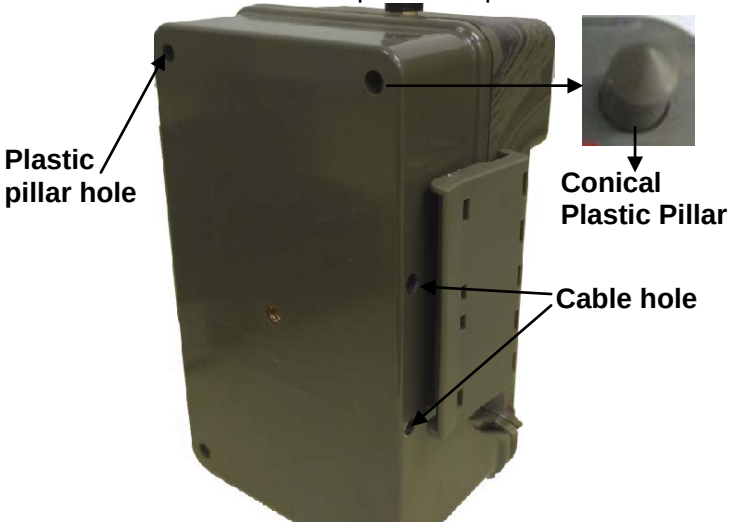
## Appendix IV: Place and Install Camera

### 1、 Mount on tripod

There is a 1/4" nut hole on the back of the camera battery box, fix the camera to tripod by screw up the nut, and then adjust shooting angle.

**2、 Mount on tree trunk**

Fits holes on battery box with four conical plastic pillars can avoid cameras being slipped off from tree and loose. Then across the theft proof holes at the side of the battery box with a cable lock, mount the camera on tree trunk.
Besides, to avoid camera being stolen and damaged, use a chain and lock to keep it safe if possible.



# FCC Caution.

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

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

**§ 15.19 Labelling requirements.**

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.

**§ 15.21 Information to user.**

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**exposure safety information:**

This **Infrared Digital Scouting Camera** meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health. Keep this product 20cm from your body.