

LTL ACORN®

Low Power Consumption Infrared Scouting Camera

Ltl-6511-4G(EXT.LCD)

LTE Cellular Mobile Communication Series

1080P HD Video

Less Than 0.2S Trigger Time in Actual Application



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 camera use low-power double PIR sensor and LTE 4G wireless module, which belongs to our company's latest research and development. The low-power dual PIR sensor has the characteristics of high accuracy and sensitivity when works in the camera, which avoid the fault shooting or missed shooting, as well as low standby current. The camera standby current has reduced to about 65~180uA, far lower than the other brands of hunting cameras with standby current 400~2000uA in the industry, which greatly extends standby time of camera. 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 4G LTE network mode, it can quickly send the 12MP original picture or up to tens of megabytes of video file to user's Email/FTP server or upload directly to the Ltl Acorn Camera Cloud System. In order to save 4G traffic flow, users can the camera to send thumbnail. 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.

Ltl Acorn established the Ltl Acorn Camera Cloud System Server based on traditional 4G wireless transmission products to offer users a better product experience. This system is a comprehensive network camera management system integrating camera image reception, image management, camera management, environmental data analysis and camera remote control. The captured picture and Video can be directly uploaded to Ltl Acorn cloud system via 4G network with protocol http/https, users are able to log in the cloud system on mobile APP, WeChat official account or computer web browser to view and manage the pictures and video uploaded by the camera, as well as remotely manage the camera, modify camera parameters, etc.

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. Send the captured file to E-mail, appointed FTP or Ltl Acorn Camera Cloud System via 4G wireless network. 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 65~180uA. 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 Type-C 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 (Please refer to the section 2.11 4G sleep function Function for specific transmission speed.).
- Send the captured file to E-mail, appointed FTP or Ltl Acorn Camera Cloud System via 4G wireless network.
- You can plug the external environment data collection device with the USB Type-C socket, which accurately detect the ambient temperature, humidity and light intensity of the environment where the camera located, and collect data automatically as well as upload the data to the Ltl Acorn camera cloud system at preset time every day.
- 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.
- Camera is set to sleep function mode: send immediately+ remote control interval is 0 hour, after a sensing trigger in ON mode, 4G module will remain in low power sleep status, to be ready to respond the command from remote control mobile number anytime and will respond the user's command very quickly. I.E. when you send a command of 60, the camera will wake up to take photo immediately and about 20s after the command you will receive the original photo just taken.
- Research and develop Ltl Acorn Camera Cloud System exclusively in the industry, the picture and video taken by the camera can be directly uploaded to the Ltl Acorn Camera Cloud System server through the 4G network. Users can manage the photo and video taken by the camera through the Ltl Acorn Camera Cloud System.
- FTP uploading function, camera uploads the file to appointed FTP after

shooting, users can download the picture or video from FTP.

- LBS update time, when the 4G sending status is in off mode and the workable SIM card is inserted, turn the camera to TEST mode, or when the LBS/ GPS positioning time is reached in ON mode, the camera will automatically search for LBS positioning, and update the camera time after LBS positioning successfully.
- GPS positioning, when the 4G sending status is not in off mode, turn the camera to TEST mode, or when the LBS/ GPS positioning time is reached in ON mode, the camera will automatically search for GPS positioning, then update the GPS coordinates and camera time after positioning successfully.
- 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.
- Photo encryption function (need to upgrade software with encryption function), the photos captured are automatically encrypted and only can be viewed after decrypted by decryption software.
- 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: -40°C - $+70^{\circ}\text{C}$.
- 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 65~180uA, makes it to be the pioneer in the industry.
- Quick trigger time (0.8 seconds). The actual trigger time when the animal passes the camera from both sides of the camera is less than 0.2 seconds.
- 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.
- Picture stamp for rich information, shows shooting date, time, latitude and longitude, temperature and month phase, etc.
- Password protected to prevent unauthorized operation.
- 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.
- Supports to operate with 2G GSM/3G CDWMA/4G LTE networks globally.

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

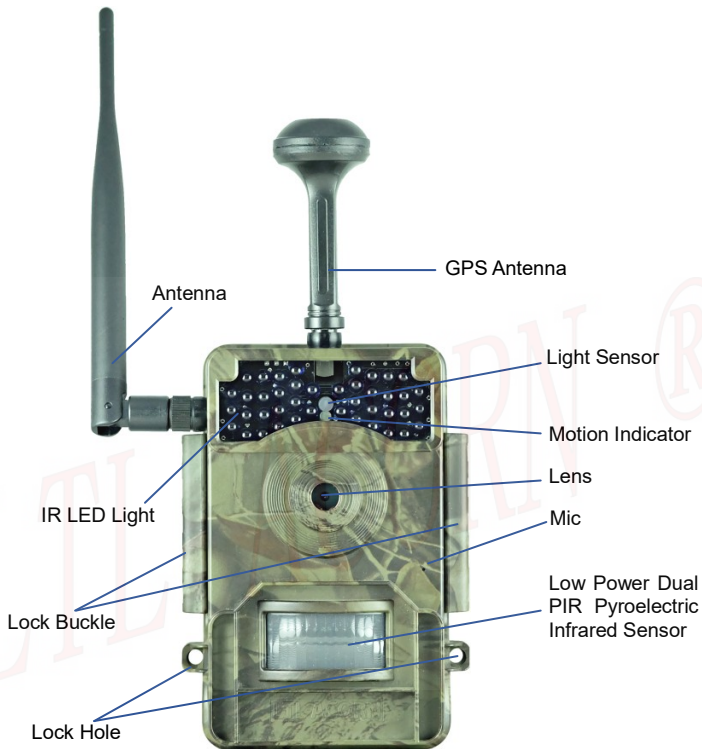


Figure 1.1 Front View of the Camera

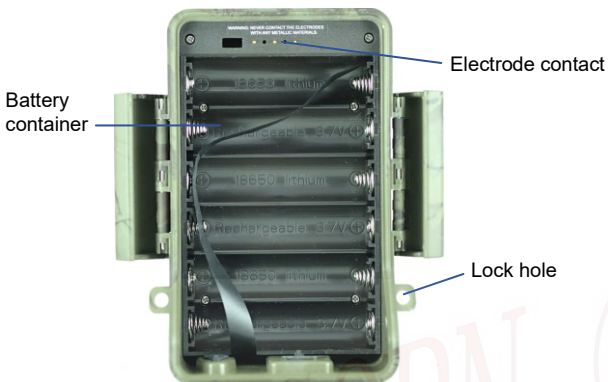


Figure 1.2 Bottom View of the Camera

The camera provides the following connections for external devices: Type -C 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	The red light flashes 5 times when the camera enters the ON automatically shooting 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

Load 4xAA batteries in camera:



- Push inward to open the battery door at the bottom of the main unit.
- According to the positive and negative marker on the battery door to load the 4xAA batteries.
- Then press to close the battery door.

Load 18650 lithium battery:

The battery box on the back of the camera could load 6 pieces 18650 lithium batteries.



- Please note that the battery polarity should correspond to the mark on the battery box when loading.
- Please follow the positive and negative labels on battery box to load the 6x18650 lithium batteries.

Note: When using the battery box to power the camera, please be sure to install 6 fully charged 18650 lithium batteries in the battery box.

As a choice, the camera can use 6V ~12V external DC power supply with output current higher than 2A (optional). When the external power and battery are both connected, the camera will be powered by external power as priority. It is recommended to use our company's LTL-SUN-9.3W or LTL-SUN (built-in lithium battery) solar charger (purchase separately), the camera will probably work in the field for more than 3 years without changing battery.

2.2 Insert SD Card

The camera must work with genuine Kingston 32GB 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.

2.3 Insert SIM Card

The SIM card should be purchased from local mobile operator, it must be 4G LTE system and be able to provide SMS and data traffic services.



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 Type-C 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 replaying.
- Press **OK 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 refer section 3.3 for details.**

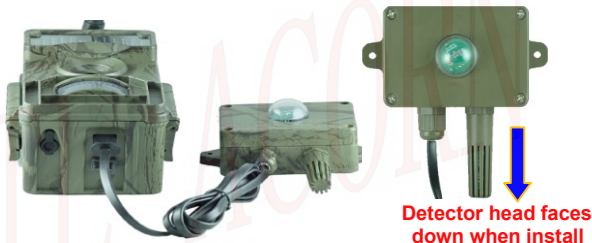
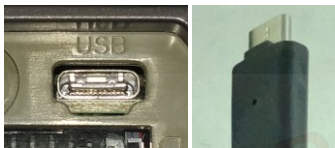
In the Test mode, you can test the working area of the IR sensor, especially the sensing angle and the sensing distance. Do the following:

- 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 Connect the environmental data acquisition device and necessary settings

Users need to buy the external environmental data acquisition device separately. You can see the Type-C USB socket at the bottom of the camera main unit, when installing, please insert the Type-C USB plug of the environmental data acquisition device with a plastic protruding side into the Type-C USB socket notch of the camera.



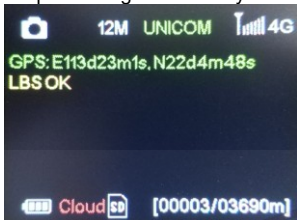
Install the external environment detection box

Connect camera with external display and turn ON to enter TEST mode, set the 4G Send Options as Ltl Camera Cloud System and set the parameters of Cloud System, then set the Environment Monitoring to ON. In this way, when the camera is connected with the environment data acquisition device in the ON mode, it will detect the environment temperature, humidity and light intensity, collect data regularly and upload to Ltl Acorn Camera Cloud System every 6 hours. The data uploaded can be viewed in page of Ltl Acorn Camera Cloud System -> Environmental data analysis.

Attention: The Environment Monitoring only works when the sending status is set to the Ltl Acorn Camera Cloud System and the Environment Monitoring menu is "ON".

2.7 GPS Positioning and LBS Update Time of camera

With the built-in GPS module, when the 4G sending status is not set to off, it can automatically search for GPS satellite signals and update the coordinate and time to camera after positioning successfully.



At outdoors, after the correct connection of the camera and external display, switch to the ON position to enter the TEST mode, the GPS module begins to automatically search the signals for position and will show prompt message **GPS...** on the display, when positioning successfully, the display screen will show the GPS coordinate such as **GPS: E113d23m1s, N22d4m48s** and update the time and coordinate to camera menu.

In the ON mode, the camera will automatically startup at positioning time(00:13) for GPS positioning and update the time and coordinates simultaneously to camera.

Before installing the camera outdoors, please connect the camera with external display, switch camera to ON position to enter the TEST mode, wait for about 1~3 minutes to see the if the GPS satellite signals of the place where the camera located could be searched or not.

Attention: GPS could only receive satellite signals in the outside place where can see the sky, there can also seriously affect GPS to receive satellite signals in the places with dense forests or under buildings. To ensure the good performance of the GPS function, please install the camera in the open air and try to avoid objects above the camera.

LBS update time requires the camera with SIM card inserted and network connected, with the correct connection of the camera and external display, switch to the ON position to enter the TEST mode, the 4G module starts LBS positioning when receiving the network signal. When LBS positioning is successful, the display will show prompt message **LBSOK** and automatically update the time of camera system

In the ON mode, the 4G module will be activated to LBS positioning and update the time to camera when camera starts searching for GPS satellite signals per day.

Attention: Both GSP and LBS has a function of updating the time of the camera(some areas do not support LBS), pls take the latest updated time as the criterion. LBS positioning speed is faster, when the GPS satellite signals cannot be searched, the time can also be updated through LBS, but cannot update the coordinates.

2. 8 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.

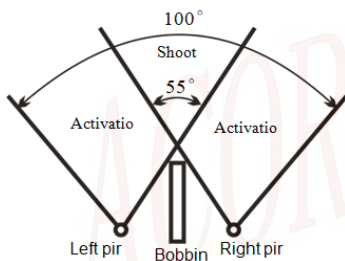
The camera has a dual range of long-range infrared sensing technology, it is able to sense the animal and activate in advance before it enters the shooting area, so that the camera enters the status of ready to shoot, the camera will shoot immediately when the animal enter the shooting area. So that 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. 9 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 65~180uA, 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. 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.

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.

Attention: Side PIR function is available for the model without wide angle lens.

2. 10 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.

Default setting of the brightness of night picture is **High**. 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.

2. 11 4G sleep function

When the 4G send mode is set as send immediately and remote control interval is set as 00 hour, the module can enter the sleep status after a sensing trigger and send successfully in ON mode.

In this way the 4G module will always be in low power sleep status, different from the SMS control of previous interval time wake-up, in this status it can respond SMS command from user at any time. You can use the preset control phone number to directly call or send remote SMS to the phone number of the SIM card in the camera, the camera will shoot immediately and send to E-mail, FTP or Ltl Acorn Camera Cloud System (or follow the remote control command to respond corresponding functions.).

Note: When the camera is in the sleep function state, it can only response to the remote SMS command 60, 61, 62 or phone call to shoot and send files back. After receiving the SMS command sent by the remote control mobile number or phone call, the camera will immediately performs to capture and send it to the E-mail. During the process, it will not respond to the new command issued by the remote control mobile number. It is recommended to send the SMS remote control command or call the number of camera to control it to shoot with interval more than 3 minutes.

When the 4G signal is normal, time to upload file will greatly shorten in the 4G sleep function status. Take an example of uploading to Ltl Acorn Camera Cloud System:

4G module in non-sleep status in ON mode (Remote control interval is set as 01~24 hour):

It takes about 45 seconds for the camera from triggering to take 12MP photo to uploading successfully(800KB).

It takes about 2 minute and 05 seconds for the camera from triggering to record video of 60s to uploading successfully (42MB).

4G module in sleep status in ON mode (Remote control interval is set as 00 hour):

It takes about 20 seconds for the camera from triggering to take 12MP photos to finishing upload (800KB).

It takes about 1 minute and 40 seconds for the camera from triggering to record video of 60s to uploading successfully (42MB).

Attention: When the camera is in the sleep status, the sleep current will be increased up, greatly shorten the sleep time. When the module is in the sleep status for a long time outdoor, it should be equipped with solar panel custom made by our company to avoid affecting your normal use.

2. 12 Camera Photo Encryption Function

After updating the firmware with photo encryption feature to camera, the photos captured by camera will be encrypted automatically, "Picture error" will be seen when the encrypted photo is replayed on camera and it cannot be viewed on computer before decryption. The photo can be viewed normally only with a dedicated decryption software from Ltl Acorn.

Attention: When the encrypted original pictures are uploaded to E-mail, FTP or Ltl Acorn Cloud System, they should be downloaded and decrypted before viewing but not viewed directly (When the 'Send Image Size' menu is set to 'Thumbnail', the unencrypted thumbnail will be received) .

Camera Photo Decryption: encrypted photos should be decrypted on the computer only, please refer to below instructions to view the encrypted photos captured by camera:

- 1、 Use SD card reader to connect the SD card to computer.
- 2、 Copy the software "**PhotoDecrypt_4G.exe**" from CD to the directory of the SD card folder(e.g. ":\DCIM\100IMA4G" in SD card on the computer(in same folder of the photos).
- 3、 Double-click the software "**PhotoDecrypt_4G.exe**" or open it by right button menu of mouse, photos will be decrypted automatically.
- 4、 Close the window of "**PhotoDecrypt_4G.exe**" directly after finishing decryption.

Attention: Please never plug in/out the SD card when decrypting the photos on the computer, otherwise it will damage photos or even damage the SD card.

After above operation to decrypt the photos, you can manage and view photos, as well as turn on the camera in TEST mode to view the photos directly in the playback mode on camera.

ADVANCED SETTINGS

3.1 Set up Parameters on Camera

The LTLACORN 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)640x480	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	Default setting is 10s , optional setting is ' Automatic ' or 2s~60s	Set length of video as required, camera will start recording video as preset length after it is automatically triggered in ON mode and stop recording till preset length is reached. Set as ' Automatic ', the length of video triggered in ON mode will automatically change from range of 3s to 30s. If animal keeps wandering in the detection range when recording video in ON mode, the recording will last up to maximum length of 30s, if animal stop moving or leave detection range, the recording will stop.
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. Recommendation: Do not set the sensitivity to high when the temperature is below 25°C.

Time Stamp	On, Off	<p>Select ON the camera or video will automatically mark the time stamp and the photo can show the camera ID, coordinates, temperature and moon phase.</p> <p>Notice: the temperature shown is the 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.</p>
Timer1	Off, On	<p>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.</p>
Timer2	Off, On	<p>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.</p>
Password Set	Off, On	<p>After selecting ON, set 4 digits as the power-on password. After password is set, others cannot turn on camera to reset the parameters. Please be sure to record the password, otherwise it is easy to forget.</p>

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, you can set the time period of automatic cycle shooting, and the camera will automatically take pictures/videos without triggering according to the time period set. This feature is useful for shooting cold-blooded animals or observing the growth of plants. This function can be used with timer settings.
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. Attention: Side PIR function is available for the model without wide angle lens.
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.
Audio	Off, On	Turn on or turn off the audio record function when recording video, default setting is ON, if you don't want to record sound when recording video, please choose OFF.

Default Set	Enter	Press OK key to return all settings to default setting (exclude the 4G parameters setting).
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

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  key to confirm and save the changes, or the new setting cannot be saved.

Parameter	Settings	Description
Language	English ,Deutsch,Su omi, Italiano, Dansk, Français, Magyar, Slovenščina,Čeština, 日本語, Nederlands, Русский,Polski	Select the language as your requirement.

4G Send Status	Off, Email, FTP, Ltl Acorn Camera Cloud System	<p>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</p> <p>Email: Set the recipient email address and sender email address of camera for email.</p> <p>FTP: Set FTP parameters and save directory.</p> <p>Ltl Acorn Camera Cloud System: Set upload parameters of Ltl Acorn Camera Cloud System .</p>
Operator	Auto Settings, Manual Setting	<p>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.</p>
4G Send Time	Immediately	<p>Send immediately: camera will immediately send photo/video to the email, FTP, or Ltl Acorn Camera Cloud System after shooting.</p>

Remote Control	Off, 0 Hour ~24 Hour	Default Off: cannot change camera setting by sending SMS command. 0 hour-24 hours: interval time to wake up camera to receive SMS commands. For example, if you set the SMS remote control time as 1 hour, the 4G module in the camera will wake up and start receiving SMS every one hour. i.e. the control command is possible to be responded more than 1 hour. SMS control can be used to change camera parameters and control the camera to take picture and send it back. As the setting time, the camera will start to search if any control message is received, therefore, the shorter the time is set, the more timely it will respond to the control command, but the more power it consumes too. In this menu, remote control phone number and remote receiver email can be set.
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, FTP or Ltl Acorn Camera Cloud System after shooting. Thumbnail: camera would send thumbnail to E-mail FTP or Ltl Acorn Camera Cloud System after shooting (Video cannot be sent in Thumbnail mode).

Coordinate input	Confirm	View or manually set coordinate longitude and latitude(make sure to set coordinates to the camera)
Environment monitoring	On/Off	When 4G Send Options is set as Ltl Acorn Camera Cloud System, select ON, in the ON mode, with the correct connection of the environmental data acquisition device to automatically collect environmental data (temperature, humidity, light intensity, etc.) and upload to cloud system). Select OFF, cannot collect environmental data.
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).

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:

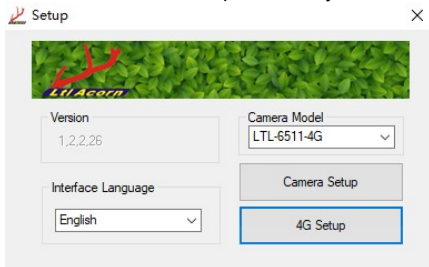
<http://www.ltlacorn.cn/?languageId=2>

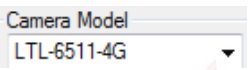
(Download→PC SETUP Download→ PC SETUP--4g setup.exe)

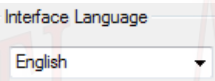
Below is the icon of the 4G-Setup.exe software:



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



Click  to choose the camera model as request.

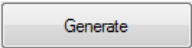
Click  to choose the software language of the interface.

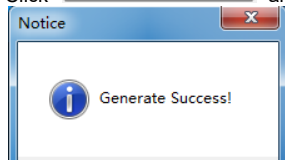
Click  to enter camera setting interface:


Mode	Camera	Image Size	5 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	On
Language	English		
Set Clock	Auto	2019 / 05 / 06 14 : 56 : 24	
Timer1	Off	Start Hour : Min 0 : 0	End Hour : Min 0 : 0
Timer2	Off	Start Hour : Min 0 : 0	End Hour : Min 0 : 0
Serial Number	Off	0 0 0 0	
Time Lapse	Off	Hour : Min : Sec 0 : 0 : 0	
Save Path	Browse	C:\Users\MAIBENBEN\Desktop\oCam_4210	
Default		Generate	

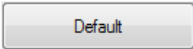
Set the camera as your requirements. Please refer to section **3.1 Set up**


Parameters on Camera for better operation. Click **Save Path** 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 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,B3.

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.

B3~B0 represents for battery level, B3 for high level, B1 for low level, please replace battery as soon as possible when B1.

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*0xxx#; 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*198888888888#	Phone Number: 198888888888
13	Recipient Phone Number 2: Maximum 48 types	13*198888888888#	Phone Number: 198888888888
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
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	Receiving time of SMS command: 0-24, 25 indicates Off. 0~24 indicates the interval time to receive SMS command.	21*25#	Off (need to turn on manually after turning off)
22	Request Full Image: Camera will send original picture to recipient E-mail	22*100IMA4G\IMAG0001.JPG #	Request full size picture "100IMA4G\IMAG0001.JPG"

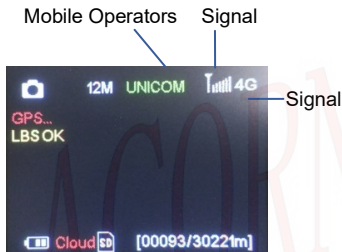
	address after receiving the command; (note: folder and file name must be capital letter).		
23	Size of sending picture: 0 for full size picture; 1 for thumbnail; valid in FTP or email mode only;	23*0#	Send full size picture
60	Get the camera to take picture immediately and send to your remote control mobile, On (1). This code is workable in these mode: amera, Video, Camera + Video	60*1#	The camera would take a picture immediately and send to E-mail after receiving this SMS command.
61	This command controls the camera to take a video immediately (no matter the current mode is 'Camera', 'Video' or 'Camera + Video' mode) and send the video to the remote receiver E-mail.	61*1#	The camera would take a video immediately and send to E-mail after receiving this SMS command.
62	This command controls the camera to start shooting immediately, according to the mode set to take photo, video or photo + video, and then send, it according to the set sending options (E-mail, FTP or Ltl Acorn Camera Cloud System).	62*1#	The camera will start shooting (according to the mode preset, take a picture, video or photo + video) after receiving this command, then send it as the send mode preset.

Note: The camera will only respond the phone remote control command of '60,61,62' when the module is in the sleep function status, or you can use remote control number to call the SIM number in camera to control it

to shoot. If you need to use the command 60 and 61, you must fill the parameters of sender E-mail and remote receiver E-mail. Command 61 and 62 cannot send video in the thumbnail send mode.

3.6 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.



In order to ensure the 4G module works properly, the signal strength should be at least 2 bars. If there is only one bar of signal, it may cause the sending and receiving of the camera is not very 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.

3.7 Features and Working Condition of 4G Wireless Module

Ltl-6511-4G camera can automatically take photo or video and back to E-mail, FTP or Ltl Acorn Camera Cloud System when it works with 4G wireless module, it allows to use mobile phone to send SMS command, receive SMS on 4G wireless module to remotely control the camera and modify camera

parameters. The main features of the camera works with 4G wireless module are as follows:

- ✧ Through the 4G network to send the original size photo and video captured by the camera to E-mail, FTP or Ltl Acorn Camera Cloud System.
- ✧ High speed of transmission: It costs less than 1 minute from triggering to finishing sending 1.5M size photo, less than 2 minutes from shooting 1080P video for 60s to finishing sending.
- ✧ Save on traffic: Photos can be sent as thumbnails to email, FTP or Ltl Acorn Camera Cloud System.
- ✧ 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 remote receiver E-mail refer to the thumbnail received.
- ✧ SMS remote control function is realized by timing wakeup to the 4G module, SMS wakeup interval could be set as 0 ~ 24 hours, the shorter of the interval, the faster of command responding, but more power would be consumed too.
- ✧ 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:

- The camera mode switch is in ON mode and functions normally after turning on the camera. SD card has enough space. The battery is installed correctly and has enough power.
- The SMS and data traffic services of the 4G LTE SIM card have been activated. 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.
- E-mail, FTP and Ltl Acorn Camera Cloud System parameters, account and password should be set correctly.
- If you have the Timer on, please make sure the specified time of timer is in the period will send picture.
- Make sure the 4G Send Options is E-mail, FTP or Ltl Acorn Camera Cloud System.
- The camera is stationary while working.







E-mail Uploading Function

Ltl-6511-4G series cameras have a function of email uploading, which can send the files record by camera to the email set by the user. To use this function, first connect the external display, turn the switch to the ON to enter TEST mode, set the sender email parameters and receiver email address correctly, then unplug the external display to enter ON mode for automatic recording, the camera will automatically record as settings and send to the designated email.

When the 4G Send Options is set to Email, the video record in the ON mode cannot exceed 50M, the email attachment exceeds the limit size, it cannot be sent successfully. The size of the video file will be different in different scene. Please take the actual scene record as the standard.

Note: When the email attachment exceeds the limit size of email, it cannot be sent successfully. Therefore, please confirm the maximum limit of the attachment allowed by your email when selecting the email address, and make sure that the file size captured by the camera is in the range allowed by the email address.

4.1 Setup E-mail Parameters on Camera

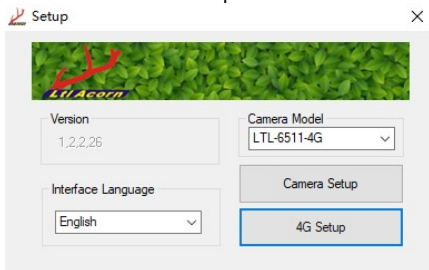
After correctly inserting the external button control box with display screen, battery and SD card, set the camera switch to the ON position, and enter the preview test mode after the camera is turned on, press  to enter 4G setting menu. Press  and  key to choose the menu "4G Send Status", press  to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

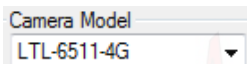
The E-mail menu is as below:

Parameters	Setting	Description
Set Parameters	Server, Port, E-mail, Password	Set E-mail of sending email
Set E-mail Address 1	/	Set receiver E-mail address to receive photo or video sent by camera.
Set E-mail Address 2	/	Set receiver E-mail address to receive photo or video sent by camera.

4.2 Set up E-mail Parameters on PC

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



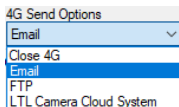
Click  to choose the camera model as request.

Click  to enter camera setting interface:

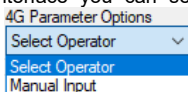
4G Send Options		4G Parameter Options	
Email <input type="text"/>		Select Operator <input type="text"/>	
Operator Selection			
Country <input type="text"/>		Operator <input type="text"/>	
China <input type="text"/>		China Unicom <input type="text"/>	
MMS Parameters		FTP Settings	
URL <input type="text"/>		Server <input type="text"/>	
APN <input type="text"/>		Port <input type="text"/>	
Gateway <input type="text"/>		User Name <input type="text"/>	
Port <input type="text"/>		Password <input type="text"/>	
Account <input type="text"/>		Upload to FTP directory (must exist)	
Password <input type="text"/>		Root <input type="text"/>	
Network Settings, Mail Parameters			
4G Network Settings			
APN <input type="text"/>		*****	
Account <input type="text"/>			
Password <input type="text"/>			
Sender Settings			
Server <input type="text"/>			
Port <input type="text"/>			
Email Address <input type="text"/>			
Account <input type="text"/>			
Password <input type="text"/>			
<input type="button" value="Next Page"/>			

To Destination				
Phone Number 1		Phone Number 2		
<input type="text"/>		<input type="text"/>		
Email Address1		Email Address2		
<input type="text"/>		<input type="text"/>		
Coordinate				
	Direction	Degree	Minute	Second
Longitude	E ▾	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Latitude	N ▾	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Send Image Size		Full Image ▾		
Max Sent Num		<input type="text"/>	/Day	
Send Mode				
4G Send Mode		Send Immediately ▾		
Daily Send Time				
Remote Control				
Remote Interval		Remote Off ▾	<input type="checkbox"/> Do not use 22,60,61 command	
Remote Phone Number		Remote Receiver Email		
<input type="text"/>		<input type="text"/>		
^ Send remote commands		^ Receive remote control request/shot image		
Save Path				
<input type="button" value="Browse"/>				
<input type="text" value="C:\Users\MAIBENBEN\Desktop\oCam_4210"/>				
<input type="button" value="Previous Page"/>		<input type="button" value="Generate"/>		


4G parameter settings interface has two pages, click to turn to next page, click to turn to the previous page.

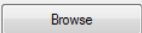


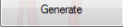
In this interface you can set 4G Send Options as

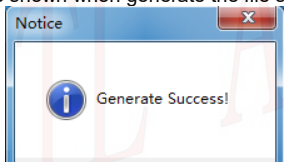



“Email”, the network parameters of the SIM card operator (select the operator network parameters, or manually enter the URL, gateway, APN, port settings, etc. according to the prompt), sender E-mail parameter settings, etc.

Click  to set the receiver E-mail, 4G sending option, mobile number and E-mail for camera remote control, remote control interval, etc.

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

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.

Note: If you enable the remote control function, you must enter the mobile number of remote control(the mobile number to send the SMS command) and the remote control receiver E-mail(used to receive the file requested by command 60 and 22).

FTP Uploading Function

Ltl-6511-4G series cameras have a function of FTP uploading, which can upload the files record by camera to the appointed FTP server. To use this function, first connect the external display, turn the switch to the ON to enter TEST mode, correctly set the FTP upload parameters, then unplug the external display to enter ON mode for automatic recording, the camera will automatically record as settings and upload to the designated FTP server.

5.1 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:

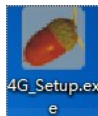
Parameters	Setting	Description
Set Parameters	Server, Port Account, Password	Set parameters of FTP site.
Upload to FTP Catalogue	Root Catalogue, Appointed Catalogue	Root Catalogue: upload the files to root catalogue of FTP site directly. Appointed Catalogue: upload the files to appointed catalogue of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

Note: The specify directory should have existed.

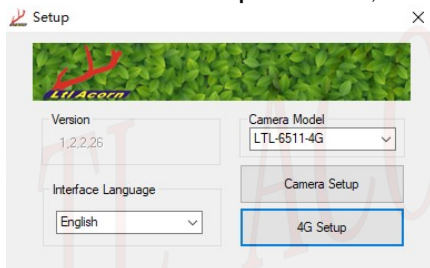
5.2 Set up FTP Parameters on PC

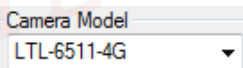
After formatting the SD card on camera, retrieve the SD card and insert into PC. The SD card reader may be needed if your PC cannot read SD card directly.

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 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 ▾ /	
Network Settings, Mail Parameters			
4G Network Settings APN ***** Account Password 			
Sender Settings Server Port Email Address Account Password 			
<div>Next Page</div>			


4G Send Settings
×

To Destination

Phone Number 1
Phone Number 2

Email Address1
Email Address2

Coordinate

	Direction	Degree	Minute	Second
Longitude	E ▾	0	0	0
Latitude	N ▾	0	0	0

Send Image Size
Full Image ▾

Max Sent Num
/Day

Send Mode
4G Send Mode
Send Immediately ▾

Daily Send Time

Remote Control
Remote Interval
01 Hours ▾
☐ Do not use 22,60,61 command

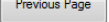
Remote Phone Number
Remote Receiver Email

^ Send remote commands
^ Receive remote control request/shot image

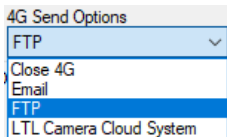
Save Path
Browse
C:\Users\MAIBENBEN\Desktop\oCam_4210

Previous Page
Generate

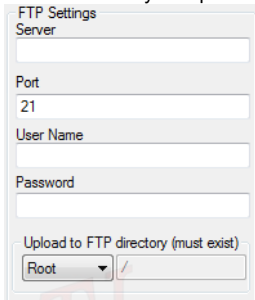
4G parameter settings interface has two pages, click  to turn

to next page, click  to turn to the previous page.

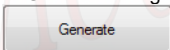
Select “4G Send Options” as “FTP” in “4G Parameter Settings” window:

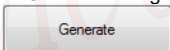


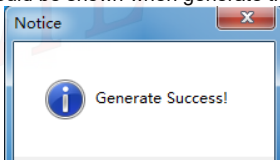
Set up "Server", "Port", "User name" and "Password" in "FTP Settings" and the FTP directory for uploading.




Set up "Sending Image Size", "Send Mode", "Save Path" and remote control parameters in the window of "4G Send Settings".



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.

Ltl Acorn Camera Cloud System Settings

Ltl-6511-4G series cameras have a function of Ltl Acorn Camera Cloud System uploading, which can upload the files record by camera to Ltl Acorn Camera Cloud System server. To use this function, first connect the external display, turn the switch to the ON to enter TEST mode, correctly set the Ltl Acorn Camera Cloud System parameters, then unplug the external display to enter ON mode for automatic recording, the camera will automatically record as settings and upload to the Ltl Acorn Camera Cloud System.

6.1 Set Parameters of Ltl Acorn Camera Cloud System on Camera

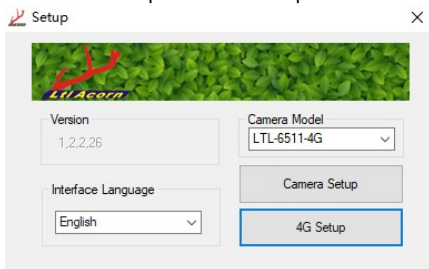
After correctly inserting the external button control box with display screen, battery and SD card, set the camera switch to the ON position, and enter the preview test mode after the camera is turned on, press  to enter 4G setting menu. Press  and  key to choose the menu "4G Send Status", press  to enter "4G Send Status", then press  and  key to choose "Ltl Acorn Camera Cloud System", the Ltl Acorn Camera Cloud System parameters can be set.

The related menu items of the Ltl Acorn Camera Cloud System are as below:

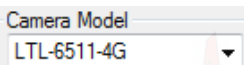
Parameter	Settings	Descriptions
Set parameters	Registered E-mail, login password, SIM card phone number	Registered email: user's login account of Ltl Acorn camera cloud system; Login password: the password that the user enters when logging into the Ltl Acorn camera cloud system; SIM card phone number: the phone number entered when adding the camera to the Ltl Acorn Camera Cloud System (better to be same as the SIM card number installed in the camera).

6.2 Set Parameters of Ltl Acorn Camera Cloud System on computer

Double click to open the 4G-Setup.exe software to see below window:

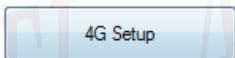


Click



to choose the camera model as request.

Click



to enter camera setting interface:

4G Send Options LTL Camera Cloud System ▾		4G Parameter Options Select Operator ▾	
Operator Selection Country China ▾		Operator China Unicom ▾	
MMS Parameters URL *****		LTL Camera Cloud System Parameters Registered mail <input type="text"/>	
APN ▾ *****		Login Password <input type="text"/>	
Gateway *****		SIM card phone number <input type="text"/>	
Port **			
Account <input type="text"/>			
Password <input type="text"/>			
Network Settings, Mail Parameters			
4G Network Settings			
APN	*****		
Account	<input type="text"/>		
Password	<input type="text"/>		
Sender Settings			
Server	<input type="text"/>		
Port	<input type="text"/>		
Email Address	<input type="text"/>		
Account	<input type="text"/>		
Password	<input type="text"/>		
Next Page			

To Destination

Phone Number 1

Phone Number 2

Email Address1

Email Address2

Coordinate

	Direction	Degree	Minute	Second
Longitude	E ▾	0	0	0
Latitude	N ▾	0	0	0

Send Image Size

Full Image ▾

Max Sent Num

/Day

Send Mode

4G Send Mode

Send Immediately ▾

Daily Send Time

Remote Control

Remote Interval

01 Hours ▾

☐ Do not use 22,60,61 command

Remote Phone Number

Remote Receiver Email

^ Send remote commands

^ Receive remote control request/shot image

Save Path

Browse

C:\Users\MAIBENBEN\Desktop\oCam_4210

Previous Page

Generate

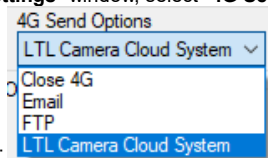
Next Page

There are two pages of 4G parameter setting interface, click

to switch to the next page, at the next page, click
to switch to the previous page.

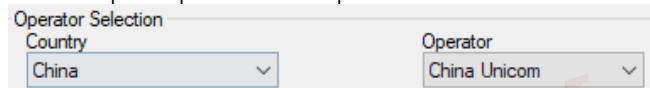
Previous Page

In the "4G Parameter Settings" window, select "4G Send Options" as "Ltl

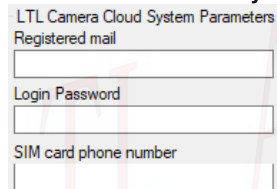


Camera Cloud System":

Select the operator parameters as required.



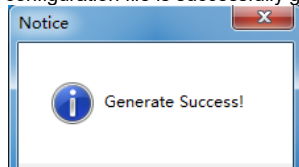
Set "Registered mail", "Login Password" and "SIM card phone number" in the "Ltl Camera Cloud System Parameters" group box.




In the "4G Send Settings" window, set "Coordinate", "Send Image Size", "Send Mode" and "Remote Control".

Generate

Click after setting, a prompt window will appear when the configuration file is successfully generated:



To close the window, please click the close button  at the upper right corner of the window.


Copy the CFG.BIN file to the root directory of the SD card on computer,


retrieve the SD card with the CFG.BIN file from the computer and insert into the camera. Switch the camera to the **TEST** mode, the prompt message “Updated 4G config Successfully” will be shown on the camera display, indicates the parameters is successfully updated.

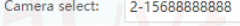
6.3 Ltl Acorn Camera Cloud System remotely modifies camera parameters

Set the 4G send options as Ltl Acorn Camera Cloud System, log in Cloud System on computer or mobile APP, you can remotely modify camera parameters though the camera parameters setting function on the Ltl Acorn Camera Cloud System.

Take computer web page operation as an example: click on the **Account**

Settings button  on the web page in the Ltl Acorn Camera

Cloud System, then click the **camera settings** button  of setting menu on the left side of the page and enter the page of camera parameter setting. In this page you can modify the camera setting.

Click the **camera settings**  on the camera parameter settings interface, select the camera model you need to set and select the camera parameters to modify on the web page, after the settings is completed, click to generate configuration files. When the camera uploads photos to the Ltl Acorn Camera Cloud System, the configuration file in the Ltl Acorn Camera Cloud System will be downloaded and updated to the camera. The camera will respond to the newly modified command parameters in the next trigger.

Camera select:	2-15688888888			
Camera mode:	video	Photo Size:	5MP	
Video Size:	720P	Shot number:	01photos	
Time stamp:	ON	Sensitivity:	low	
SidePIR:	ON	Videotape time:	10	Sec
Timeinterval:	1 Minute	Wireless send:	Off	
Send Image Size:	Full Image	Remote control time:	1Hour	
Remote Receiver mail:				
Phone Number1:		Phone Number2:		
Email Address1:		Email Address2:		
Coordinate	Direction	Degrees	Min	Sec
Longitude:	East	0	0	0
Latitude:	North	0	0	0
Timing setting				
Timing setting1:	Off	Start :	0Ho	0Mir
End :	0Ho	0Mir		
Timing setting2:	Off	Start :	0Ho	0Mir
End :	0Ho	0Mir		
Sequence number setting				
Serial No.:	Off	0	0	0
		0		
Timing shooting setting	Hour	Min	Sec	
Time shooting:	Off	0Hour	0Min	0Sec

Default
Generate

6.4 Ltl Acorn Camera Cloud System Introduction

Ltl Acorn Camera Cloud System is a comprehensive network camera management system integrating camera image reception, image management, camera management, environmental data analysis and

camera remote control. The users log in the camera cloud system on the mobile APP or computer web browser, allowed to view and manage the images and videos uploaded by the camera, remotely manage the camera, modify the camera setting parameters, etc.

Open web browser and enter website: <http://ltl.miniacorn.us/index> to enter the Ltl Acorn Camera Cloud System login interface:

click "Quick Registration" at the right side and follow the prompts to fill out the information registration account.

Click "Quick Registration", enter the account and password, click on the login button to login the Ltl Acorn Camera Cloud system.

Click " Mobile LtlAcorn Cloud " to enter the download page of Ltl Acorn Camera Cloud System Mobile APP, download and install the mobile phone APP according to the prompts.

After logging into the Ltl Acorn Camera Cloud System on computer, click



button **Account Setting** in the Ltl Acorn Camera Cloud System

page, then click the button

Use help at the left setting menu

in the page to open the instruction manual of the Ltl Acorn Camera Cloud System.

Note: Please refer to the detailed operation instructions of Ltl Acorn Cloud System, Ltl Acorn Cloud System mobile APP and WeChat official account in the Use help of Ltl Acorn Camera Cloud System website.

LTL-6511-4G Series Products

Ltl-6511-4G series 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.

7.1 Ltl-6511-4G series model:

Ltl-6511-4G(EXT.LCD) camera is able to upload photo and video of any resolution to E-mail,FTP and Ltl Acorn Camera Cloud System according to the camera setting, it can also be set to send thumbnail at 640x480 only.

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)**

Attention: The camera is able to enter ON and OFF mode only when it is not connected with the external button control box with display, it can enter the TEST mode when the switch is turned to ON mode with the external display connected.

IMPORTANT INFORMATION

8.1 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, two paths power are isolated and do not charge or discharge others. So it allows to connect to external solar panel for charging with external power supply socket. It is recommended to use our company's LTL-SUN-9.3W or LTL-SUN (built-in lithium battery) solar charger, which can charge the 6*18650 lithium batteries in the camera, greatly extend the working time of the camera. According to the working condition of the camera, it can even work all the time and no need to replace the battery. AA battery is easy to leak, please check it once a year and replace it in time once problem is found. Or please use the low self-discharge AA battery which will not have battery leakage in battery compartment. **The camera damaged by battery leakage is not covered in warranty.**

8.2 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.



8.3 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.

8.4 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.

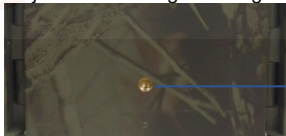
Attention: The camera performs at extreme cold environment as low as -40°C, in which the battery power capacity deteriorates drastically. Therefore, the number of video clips decreases accordingly.

8.5 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.

8.6 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**

8.7 FAQs on 4G Function

- **The camera stops sending :** Please check if the SIM card balance is enough and local signal is well.
- **It takes so long to receive 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 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.

8.8 Low Battery Alert

The camera shows the battery level on each picture. When the battery level is high, the battery icon is shown as  at the bottom left corner. When the battery level gets lower, it shown as . When the battery level is continuously decreased, it will be shown as , means that it's time to replace the battery. Otherwise, when the power continues getting lower, the battery icon will be changed to  and the camera will stop working due to low power. User can replace the battery timely according to the battery level displayed on the photo sent by camera.

Precautions

9.1 Battery safety

The camera can hold 4 AA batteries and 6 18650 lithium batteries, about the use and storage of batteries, please note:

- ◆ Do not short-circuit the battery.
- ◆ Do not soak the battery in the water.
- ◆ Do not approach and place the battery in the fire.
- ◆ Do not dissect and deform the battery, avoid contacting with the skin after the battery leakage.
- ◆ Do not mix batteries of different capacity when charging and using.
- ◆ Avoid placing the battery in device that unused for a long time.
- ◆ If the battery performance drops significantly, please replace to new battery.
- ◆ The inside of the battery is toxic substance of heavy metal , it's strictly prohibited to put into mouth.
- ◆ Please keep batteries away from children.

- ◆ Do not mix and use with other different types of batteries.
- ◆ Do not connect the battery electrode incorrectly in the charger or camera.
- ◆ Please check the battery regularly and replace abnormal battery in time.
- ◆ The battery should be placed in a cool, dry and well-ventilated area.
- ◆ When charging the 18650 battery, please connect the positive and negative poles correctly, do not use retrofitted or damaged charger, do not place the battery in the charger for more than 24 hours.
- ◆ Batteries should be stored at room temperature and should be charged to 30% to 50% of electricity. If stored for a long time, it is recommended to charge the battery every six months to prevent from over discharge.
- ◆ Waste battery treatment should comply with local regulations, so as not to endanger the environment and health.

Note: 18650 lithium batteries must be charged by qualified 18650 lithium battery charger and cannot use retrofitted or damaged charger. 18650 lithium battery charging cut-off voltage is 4.2V, a single 18650 lithium battery current is about 440mA~1100mA, please do not charge it at low temperature environment.

9.2 Use Camera Outdoors

When the camera needs to work outdoors for a long time, please note:

- ◆ Install the 4 fully charged AA batteries properly in the camera.
- ◆ Properly install 6x18650 lithium batteries in camera battery compartment.
- ◆ Connect the external display to the camera, set the camera parameters as needed, and then remove the external display.
- ◆ Switch the camera to ON mode, then connect the camera and battery compartment, clasp buckles tightly (please be careful not to hurt the hands or get stuck by foreign matter during assembly).
- ◆ Please choose straps, steel cables or brackets to fix the camera as required, strongly pay attention to fix the camera firmly to avoid falling off to hit people or breaking the camera.
- ◆ When camera works for long time, please check the camera and batteries regularly to deal with the abnormal situation in time.
- ◆ There are 42 850nm or 940nm infrared LED lights on the camera. When the infrared LED light of camera is on, please do not look at the light closely, the distance between the eyes and the lights should not be less than 1.5 meters, and please do not directly view the lights over 3 seconds, the interval between two direct viewings shall not be less than 2 hours to avoid the harm to the eyes.

9.3 Introduction of 18650 Lithium Battery

Ltl Acorn provides two types of 18650 Lithium battery for different working temperatures of -10°C and -40°C. Users can choose battery according to the actual working temperature of the camera.

Parameter	18650 Lithium battery for working temperature -10~60°C	18650 Lithium battery for working temperature -40~60°C
Nominal voltage	3.7V	3.7V
Maximum charging voltage	4.2V (±0.2V)	4.2V (±0.2V)
Lowest voltage on discharge	3V	2.5V
Capacity	2200mAh	2200mAh
Standard discharge current	440mA	1100mA
Standard charging current	440mA	1100mA
Working Temperature	Charge: 0~45°C Discharge: -10~60°C	Charge: 0~45°C Discharge: -40~60°C
Working Humidity	< 85% RH	< 85% RH

Please select the battery charger according to the charging voltage and charging current required by the battery.

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 to computer. Copy the camera program FW6511-4G.bin to the root directory of the SD card (please ask the local dealer for the effective download address of the camera program). Turn the lock switch of SD card to the LOCK position, then insert into 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.
- The upgrade will have been finished successfully.
- Retrieve the SD card and unlock it, then re-insert into camera and format it.

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 accidentally 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 and paste the program AP4G76 to the root directory of the SD card.
- Set the camera "4G Send Status" as "Email, FTP, or Ltl Acorn Camera Cloud System" and set the send option as "Send Immediately". Set up the remote control mobile phone number (to receive SMS of upgrade finished).
- 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.

Remote update program via Ltl Acorn Camera Cloud System

The Ltl-6511-4G series camera with newly added function of remote update camera program via Ltl Acorn Camera Cloud System. The function of remote update program allows you to remotely update camera FW, Loader and module software.

Conditions of online update:

- 1、The 4G send status of camera is set to 'LTL Camera Cloud System' and the upload parameters are set correctly.
- 2、Enter ON mode to ensure that the files captured by the camera are properly uploaded to the Ltl Acorn Camera Cloud System.
- 3、Users must login the Ltl Acorn Camera Cloud System through the browser on PC to upload the camera program.

Online Update:

In ON mode, please confirm the photo or video captured can be uploaded to Ltl Acorn Camera Cloud System successfully, then users can login the Ltl Acorn Camera Cloud System through the browser on PC and upload the program by below steps.

- 1、Please login Ltl Acorn Camera Cloud System through browser on PC,

click camera manage  Camera Manage .

Cloud > Camera Manage Search


SIM Number : SIM Number

Batch delete Add 3/4G camera Total number of lines: 5strip

View the camera notes, mailbox information, etc., please open the edit dialog box

	Serial number	IMEI	SIM Card number	Total numbers	Camera name	current location	electricity	About working hours(h)	About working hours	Operation
<input type="checkbox"/>	1	3	185	468	A	广东省清远市清新区	Low	3433	2019-07-25 03:08:10	
<input type="checkbox"/>	2	6	185	74	B	广东省清远市清新区	High	2785	2019-06-28 02:25:48	
<input type="checkbox"/>	3	3	156	296	3333	广东省清远市清新区	Low	1227	2019-06-27 00:00:00	
<input type="checkbox"/>	4	5	137	0	123	Coordinate information error, location information not found	High	0	2019-06-10 22:28:02	
<input type="checkbox"/>	5	6	21	68	RUBBER MO NKEY	Coordinate information error, location information not found	High	241	2019-06-24 00:00:00	

2、Find the camera that needs to be updated in the camera manage list, click

the edit button  in operation line at the right side to pop up the edit window. In the window you can see the camera's current program version and the file selection buttons.

Edit

×

Latitude:

eg:22.083664

Remarks:

camera model:

Ltl-6511-4G(EXT.LCD)

MCU version:

V65114GExt.038

FW version:

V1.2.160D_190705B-A

FW upload:

Choose File

No file chosen

Loader version:

N20190410084540

Loader upload:

Choose File

No file chosen

Modular version:

V1.01_4G_CEA1907031516

Modular upload:

Choose File

No file chosen

Confirm

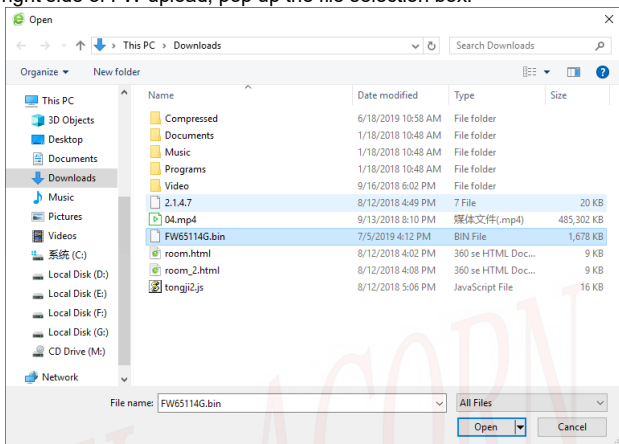
3、Click "Select file" button at the right side of FW upload, Loader upload (upload Loader program) or module upload to select the program to update.

Take FW upload as example: click select file button

Choose File

 at


right side of FW upload, pop up the file selection box.



Find the camera software program 'FW65114G' you want to update through the open file window that pops up in the browser, choose and click 'Open', you can see the FW65114G.bin appears at the right side of select file button;

camera model:	Ltl-6511-4G(EXT.LCD)
MCU version:	V65114GExt.032
FW version:	V1.2.160D_190624A-A
FW upload:	<div>Choose File FW65114G.bin</div>

4、Then click the confirm button **Confirm** below the edit window, wait patiently for about 20 seconds (the wait time is different depends on different network speed), the edit window will be automatically closed, camera program uploaded successfully.

Note: Click the confirm button **Confirm** below the edit window to start uploading program, during upload process, please to be patiently to wait till the window is closed automatically, do not click the confirm button or close button  again, otherwise it will cause the upload

failure.

5、After successfully upload the update program to the cloud system, when the camera record and upload photo or video to the cloud system again, it will automatically download and save the update program from the cloud system to the camera SD card, as well as automatically update.

Upload operation of Loader and module program is the same as FW upload, it automatically download and update at the next time when camera records and uploads.

After the camera automatically update successfully, you can view the camera version to confirm the update is successful at camera manage→edit window.

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") ; 480(RGB)*240DOT;16.7M Color, 6 keys
Memory Card	Support genuine Kingston 32GB SD card only.
Picture Size	12MP(4000x3000), 5MP(2560x1920), 2MP(1600x1200)
Video Resolution	1440x1080: 15 fps ;1280x720: 30fps; 640x480: 30fps; (Black and white video 15fps)
PIR Sensitivity	High/ Normal/ Low/ Off
PIR Sensing Distance	18 meters (below 25℃ at the Normal sensitivity)
Angle of advance boot of horizontal double PIR sensing	The maximum angle between left and right is 100°,the individual sensing range of the left and right lens can be triggered to activate the camera in advance.
Sensing angle of shooting PIR	100° Overlapping sensing range of left and right lens: Non-wide-angle lens model: 55°; wide-angle lens model: 100°
Operation Mode	Day/ Night

Time from trigger to finish shooting	0.8 Seconds
Trigger Interval	0sec - 60min; Programmable
Photo Burst	1~3
Video Length	2~60sec ; Auto (3~30 seconds Automatic adjustment; Programmable;
Camera + Video	First take Picture then Video
Playback Zoom In	9-step zoom + parallel move to view details
Time Stamp	On/Off; Includes serial number, longitude and latitude, 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
Phone call(signalling) control command	When you use the remote control phone to call the camera, the camera will perform as preset to capture the photo or video then send it back.
SMS remote control shooting command	Send the text of command 60/61 or 62 on mobile, after receiving command, the camera will take photo, video or shoot as preset according to the command, then send it to the E-mail.
4G module sleep mode	The module is always powered on and connected to the base station, it will respond immediately anytime when you send text or call the camera (signalling). You can generally receive the original photo file within 20 seconds.
SMS remote control time	The interval to receive SMS messages can be set from 1 to 24 hours. For example: set interval

	<p>as 1 hour, Send the text of command 60/61 or 62 on mobile, camera can receive SMS command and transmit the image file within 1 hour.</p> <p>The module normally cuts off the power and does not consume power, it will work after camera shooting and then transmit the image file.</p>
Image immediately send function	Send image to the preset receiving end immediately after finishing shooting.
Remotely modify camera parameters intensively	Set the camera parameters and remotely modify on the Ltl Camera Cloud System: when the camera uploads images to the Ltl Camera Cloud System, it reads the parameter settings generated by the Ltl Camera Cloud System and takes effect at next time when the camera works.
4G Send Options	Email, FTP, Ltl Camera Cloud System, Close 4G=doesn't send file to E-mail/FTP/ Ltl Camera Cloud System; programmable; Send picture and video, no limited size of video file, a video of 60s is about 40~70M usually.
4G transmission speed	About 12-18S to send original picture of 12MP(about 800K) to receiving end.
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
Ltl Camera Cloud System	It has the functions of receiving and managing image files, identifying common animal species, setting the parameters of the Ltl Camera Cloud System, and displaying the actual position of camera on the map, etc.
Ltl Camera Cloud System APP	Use the Android/iPhone Ltl Camera Cloud System APP to visit Ltl Camera Cloud System on mobile.

Ltl Acorn WeChat official account	Easy access to the Ltl Camera Cloud System by visiting the official account of Ltl Acorn on WeChat
Environmental monitoring	After the camera is connected to the environmental data acquisition device, the ambient temperature and humidity and intensity data can be collected and uploaded to the Ltl Camera Cloud System.
GPS Positioning	In TEST/ON mode(once a day), the camera automatically search GPS satellite signals, update the coordinate and time of camera
Power Supply	4 x AA, 6 x 18650 Lithium Battery
External DC charging (optional)	DC plug size: 4.0mmx 1.7mm, DC charging voltage 12V~24V (DC power supply standard of customized version is 6V~12V, 1~2A)
Solar panel charging (optional)	LTL ACORN weak light solar panel can be used to charge the rechargeable battery in the camera, saving energy and the battery can work for long time without changing.
standby current	65~180uA
Standby time (4G module is closed)	3 year (4 x AA, 6 x 18650 Lithium Battery)
Auto Power Off	Auto power off in 4 minutes without any operation in TEST mode.
Power Consumption	180mA (+620mA when 940nm IR LED lights up)
Interface	TV out; Type -C External Control Box Socket; SD Card Slot; SIM Card Slot; DC External
Mounting	Strap; Tripod; Conical Plastic Pillar
Ingress Protection	IP66
Working Temperature	-40℃ ~ +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
Environmental data acquisition device(optional)	1
Strap	1
Steel cable / lock (optional)	1
External DC Power Cable (optional)	1
Warranty Card	1

Note: About the external button control box with display screen, users can choose to buy or not.

Appendix III: Illustration of Battery Box Installation

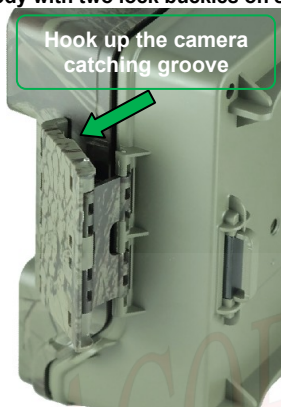
1、 Please follow the positive and negative labels on battery box to load the 6x18650 lithium batteries.



2、 Close the camera with battery box.



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



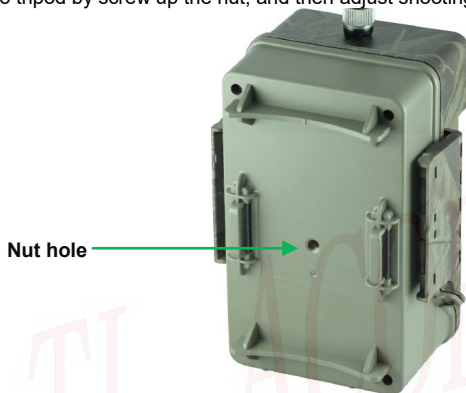
4、 Snap on lock buckles.



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.

**Plastic
pillar hole**

**Conical Plastic
Pillar**

Cable hole

