

Infrared Mobile Digital Scouting Camera
User's Manual
SG550M-8mHD



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1 Instruction

1.1 General Description

This camera, a digital scouting camera with MMS function, is a digital infrared surveillance camera, triggered by any movement of humans or animals monitored by a high sensitive Passive Infrared (PIR) motion sensor, and then automatically captures high quality pictures (up to 8M pixels) or records video clips (720P HD) according to default settings or preset customer settings. It will then send the pictures instantly to your mobile device or email via GSM/GPRS/MMS network. You'll be alerted just when the camera is triggered or per custom settings.

It takes color pictures or videos under sufficient daylight. While at night, the built-in 940nm LEDs take clear pictures or videos (monochrome).

There is a 1.5" color LCD display screen on the camera and a sound recorder embedded in the camera. A laser pointer is used to help target the photo area of the camera. It supports MMS/SMS/E-mail via GSM/GPRS Network.

It is resistant against water and snow. The camera can also be used as a portable digital camera.

1.2 Camera Body Interfaces

The camera has the following I/O interfaces: USB connector, SD card slot and external DC power connector.

Take a few moments to familiarize yourself with the camera controls and displays. It is helpful to bookmark this section and refer to it when reading through the rest of the manual.

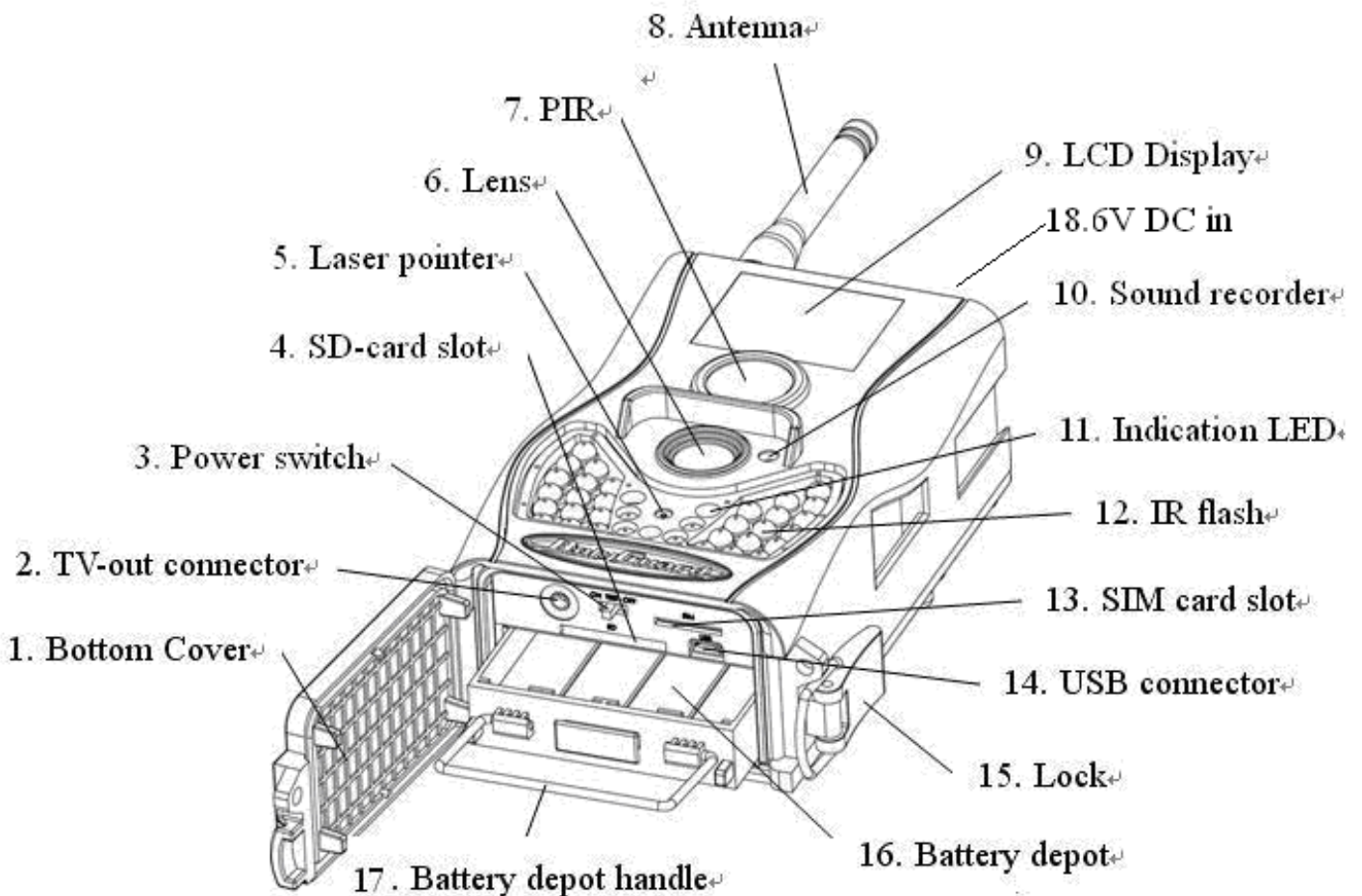


Figure1 Diagram of camera functional indicators

1.3 Remote Control

The remote control is the input device for the

camera and is primarily used for customer settings and password input. This is an infrared type wireless remote control. The maximum remote distance is 30 feet.

There are fifteen buttons on the remote control.

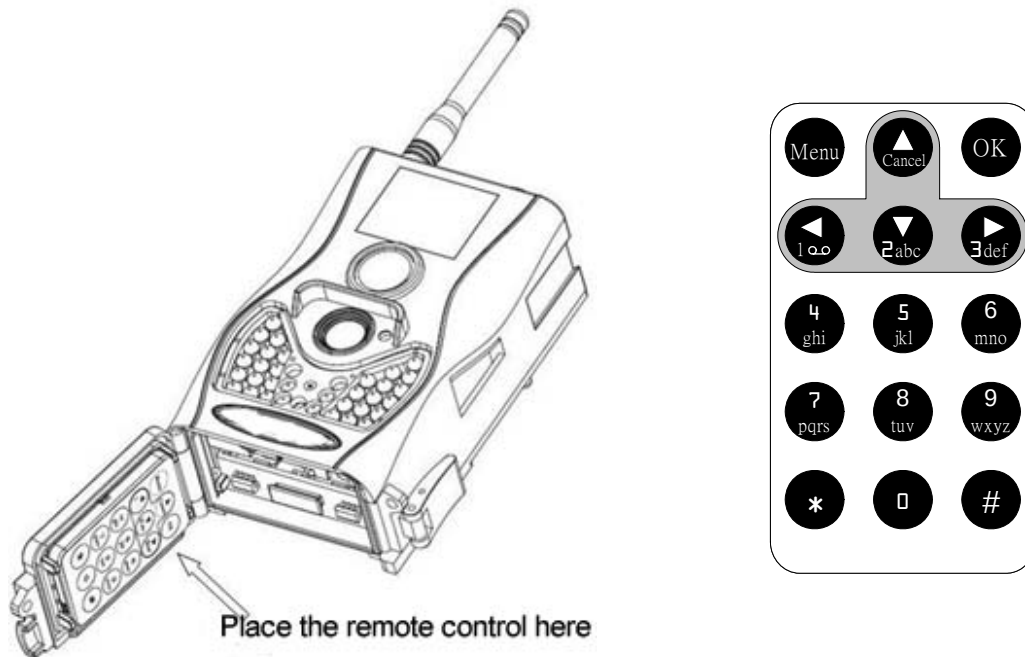
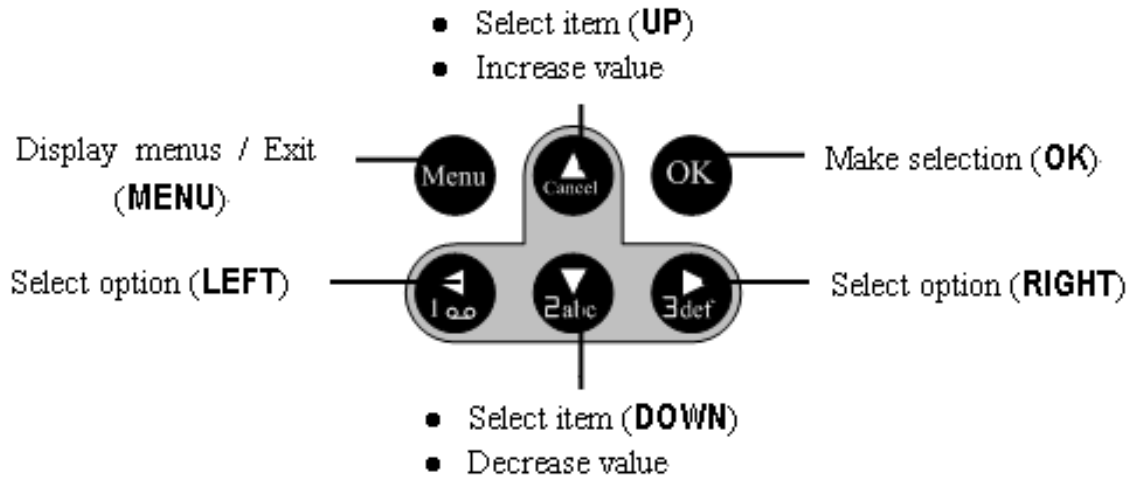


Figure 2 Remote control

1.3.1 Navigating

Press **UP** or **DOWN** to select or highlight the menu item. Press **LEFT** or **RIGHT** to select the option of each item and press **OK** to make a selection.



1.3.2 Characters

When entering digits, letters or punctuations into an input column, there are some useful characters that can be used by pressing the button continuously:

: 1 . / : @ _

: 0 + -

Press the punctuation “*” for laser pointer.

1.4 Shooting Information Display

When the camera is turned on (the power switch is slid to **TEST** position), the current settings will be displayed on screen.

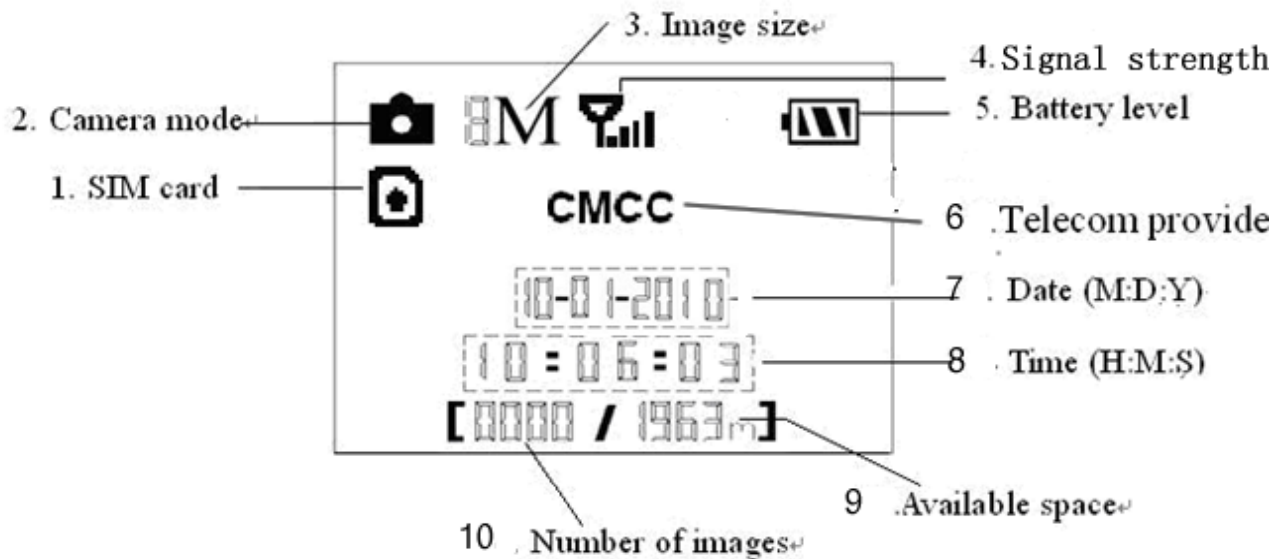


Figure 3 Shooting information display

1.5 MMS/GPRS function

This camera can send pictures instantly to your mobile device via GSM/GPRS network. You'll be alerted just when a picture or video has been taken. The camera sends MMS message through GPRS network, so before using this function, you need to open GPRS service from your service provider. It supports four band : 850MHz, 900MHz, 1800MHz and 1900MHz.

SIM card Icon: There are two SIM card icons which stand for different installation situations.  means the SIM card is inserted and it works well.  means the MMS function can't work correctly because of loss of signal or other communication issues. If the SIM card is not inserted, no SIM card icon will be displayed.

1.6 Supported Format

Item	Format
Photo	JPG
Video	AVI
File format	FAT32

Here are some important notices. The file system format is not a concern of the camera unless you have problems with reading the SD card with other devices. If this happens, please format the SD card in the camera or in a computer and then reinsert the card into your camera.

2 Cautions

- ★ The working voltage of the camera is 6V. The camera is supplied by 8 AA batteries. Please install batteries according to shown polarity.
- ★ Must insert the SD card before power on camera. If no SD card is inserted, the camera will shut down automatically after a continuous indication sound.
- ★ Please unlock the write-protect before inserting the SD card and insert the SD card when the power switch is at OFF position. Please do not insert or take out the SD card when the power switch is at ON position.
- ★ It is recommended to format the SD card by the camera when used for the first time. Many other SD cards formatted by other cameras have poor compatibility with different brands of cameras.
- ★ Must make sure that your SIM card has opened the GPRS data business. When going into the setup mode, allow approximately 10-20 seconds for the camera to acquire a signal.
- ★ In TEST mode, the camera will shut down automatically after 3 minutes if no operation is done. Please turn on the power again if you want to continue to work with the control.

3 Quick Start Guide

3.1 Power Supply

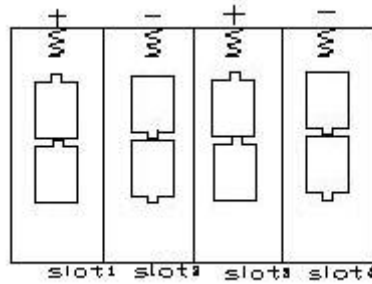
To supply power for the camera, four or eight AA batteries are needed.

Open the bottom cover. Confirm that the power switch is in the **OFF** position and pull out the battery pack by pulling the silver handle. Load the fully charged batteries into the pack according to the polarities signs shown below. Push the battery pack back into the battery chamber. The following batteries with 1.5V output can be used:

1. High-density and high-performance alkaline batteries (recommended)
2. Rechargeable alkaline batteries
3. Rechargeable NiMH batteries

There are four battery slots. Slot 1 and 2 form one group and is marked “1” while slot 3 and 4 form the other group and is marked “2”. One “group” of batteries is needed to supply power for the camera, but both can be used and is recommended.

When in a low-battery state, the camera will be automatically shut down after two indication sounds. Before that it will send a SMS to indicate the low battery situation. Please change the batteries at this time.



Caution: Risk of explosion if battery is replaced by an incorrect type. Also dispose of used batteries according to the instructions.

 **Correct Disposal of this product.** This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

3.2 Insert the SD card and the SIM card

Open the bottom cover. Insert an SD card into the card slot. Please note that the SD card is on the “write” (not locked) position otherwise the camera will not function correctly. When using MMS/SMS/E-mail functions, be sure to insert a SIM card into the SIM card slot with angle in the

upper left.

3.3 Do the Camera Settings

Down load the camera setting up software (BMC_config.zip) from our website. The specified website is written in the last page of the manual.



3.4 Enter into the Test Mode

Slide the power switch to **TEST** position and enter into **TEST** mode. There are some functions in **TEST** mode: Custom settings, manual capture, preview or send MMS manually. The remote control is needed in this mode.

3.4.1 Custom Settings

Press **MENU** on the remote control to enter into the menu setting. The camera can be adjusted to manually customize the camera settings which display on the LCD screen. The detailed operations will be described in the “Advanced Operations” chapter.

3.4.2 Manual Capturing

You can press **RIGHT** to manually capture a photo or record a video.

3.4.3 View Images or Videos

Press **OK** to view images, the latest image will be shown on the LCD screen of the camera. Press **UP** to view the previous image and press **DOWN** for the next image. Please note that a video cannot be played back on the LCD screen and only the thumbnail of the video is showed.

3.4.4 Delete Photo or Video

View the image (or video) which to be deleted, select the one you want to delete. Press **MENU** to **DELETE** and **LEFT** or **RIGHT** to select all, then **OK** to delete.

3.4.5 Send MMS

When Send Mode is set as “Manual”, you can send the selected photo to the preset address in TEST mode. “Daily Report” and “Instant” mode

worked in ON mode.

3.5 Power on and Enter into the ON Mode

Before switching on, please pay attention to the following:

1. Avoid temperature and motion disturbances in front of the camera such as a big leaf, curtain, air-conditioner, air outlet of the chimney and other heat sources to prevent from false triggering.
2. The height from the ground for placing the camera should vary with the object size appropriately. In general, three to six feet is preferred.

Slide the power switch to the **ON** position and enter into the **ON** mode. Before entering into the **ON** mode, you can adjust the camera towards the target monitoring area by laser pointer.

After switching on the camera, the motion indication LED (red) light will blink for about 10s. The 10s is a buffering time before automatically capturing photos or videos, e.g. for closing and locking the bottom cover, fixing the camera on a tree and walking away.

In **ON** mode, it is unnecessary to use the remote control. The camera will take pictures or videos automatically according to the default

settings or previous custom settings. The camera has the sound recording function, so the sound will be embedded in the video clip while capturing a video.

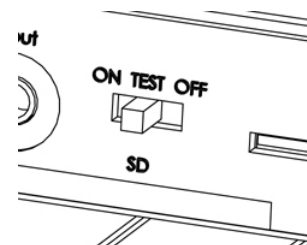
3.6 Power Off

Slide power switch to **OFF** position to turn off the camera. Please note that even in **OFF** mode, the camera still consumes a small amount of battery power. Therefore, please remove the batteries if the camera is not in use for long time.

4 Advanced Operations

From the basic operations of the camera previewed in the previous chapter, we know that the camera has three basic operation modes:

1. **OFF** mode: Power switch is in **OFF** position.
2. **ON** mode: Power switch is in **ON** position.
3. **TEST** mode: Power switch is in **TEST** position.



In the above three modes, the **OFF** mode is the specified safe mode when replacing the SD card or batteries and transporting the camera.

This chapter explains the advanced operations for customizing the camera settings.

4.1 Settings Menu

To view the camera settings menu, press **MENU** in the **TEST** mode (called settings menu in this chapter). The settings menu will be shown on the LCD screen.

Setting Items	Description
Language	Choose the language of menu you need.
Camera Mode	Choose capturing images or recording videos.

	Shortcut key: Press UP to set the camera mode as Video or press DOWN to set camera mode as Photo in TEST mode.
Set Clock	You can change the date and time when necessary, e.g., after every battery change. The date format is month/day/year , the time format is hour: minute: second . Press “▶” to select item, press “▲” or “▼” to change the value. The valid value for year is between 2009 and 2050.
Photo Size	Choose the image size, e.g. 8 mega pixels or 5 mega pixels.
Photo Burst	This parameter affects the number of pictures taken for each triggering in Photo mode. It has three values: “1 Photo” “2 Photos” and “3 Photos”.
Video Size	Choose the video size, e.g. 1280×720(HD) or 640×480(VGA).
Video Length	Choose duration of recording video.
Time Lapse	Time lapse means the camera can capture images or videos at a preset time interval regardless of whether motions are detected. The default parameter is Off , which means the

	timer function is disabled. Changing this parameter to a non-zero value turns on the Time Lapse mode, and camera will take photos at given time interval. <i>Please note that if the PIR Trigger is set to Off, then the Time Lapse can't be set to Off.</i>
PIR Trigger	This parameter defines the sensitivity of the PIR. There are four sensitivity parameters: High, Normal, Low and Off. The default value is "Normal". The higher degree indicates that the Camera is more easily to be triggered by motion, taking more pictures or recording more videos. It is recommended to use high sensitivity degree in room or environment with little interference, and to use lower sensitivity for outdoor or environment with lots of interference like hot wind, smoke, near window etc. Furthermore, the sensitivity of the PIR is strongly related to the temperature. Higher temperature leads to lower sensitivity. Therefore it is suggested

	to set a higher sensitivity for high temperature environment. <i>Please note that if the Time Lapse is set to Off, then the PIR Trigger can't be set to Off.</i>
PIR Interval	This parameter indicates how long the PIR (Passive Infrared motion sensor) will be disabled after each triggering in ON mode. During this time the PIR of the device will not react to the motion of human (or animals). The minimum interval is 0 second which means the PIR can work all the time.
Work Hour	The camera can be set to only record/capture at a certain time of the day when set to On. The rest of the time the camera will be shut off and will not record any triggers by movement. This function can be set to Off which means the camera works all day.
MMS Set	The camera sends MMS message through GPRS network, so before using this function, you need to open GPRS service from your service provider.

	You should set the right MMS setting parameters. The settings of MMS: URL, APN, IP and Port. Please contact the network service provider if you are not familiar with the settings.
GPRS Set	The camera sends image through GPRS network with SMTP protocol to Email address. Use this way the communication cost will be much cheaper in many countries. You should set the right GPRS setting parameters. The settings of GPRS: Email Server, Port and APN. Please contact the network service provider if you are not familiar with the settings.
	There are 3 Sending modes: “Manual” works in TEST mode, “Daily report” and “Instant” work in ON mode. 1)“Manual”: Choose “Manual” in Test mode. Please note, only photos can be sent in TEST mode .Video information can’t be sent in TEST mode. 2)“Daily Report”:

Send Mode

Daily Report works only in ON mode, which means that the camera will report the summarized information at the preset time (if the preset time is, eg.20:00PM) on how many pictures it had taken per day. So, you will get a summarized text message with the last picture taken until 20:00PM when it is in Photo mode.

If it is on Video mode, the camera will send a SMS at the preset time. The SMS will show you how many video clips the camera has taken within 24 hours.

If you choose “Daily Report”, you need to set the daily report time: xxH, xxM.

3) “Instant”:

Instant, just works in ON mode, which means the camera will send an MMS instantly after it captures a photo. You can choose the number of how many pictures you want it to send out per day.

If it is on Photo mode and you chose the Instant MMS mode, and set

	the MAX number is 10, the camera will send 10 MMS within 24 hours .And then it continues to capture photos and save them on the SD card. After 24 hours, the camera will send MMS again when it captures photos. If it is on Video mode, the Camera will send only SMS instead of MMS. If you choose “Instant”, you need to set how many MMS you want to send for economy consideration. 4) “OFF”: To disable communication function.
Send To	Choose to send the image to your Phone or to Email. Phone[MMS]:Send the image to cell phone via WAP. Email[MMS]:Send the image to Email address via WAP. Email[GPRS]:Send the image to Email address via SMTP. Use this way the communication cost will be much cheaper in many countries.
Version	This parameter shows the information about Firmware and IMEI of this camera.

Format SD	Format the SD card. All images and videos in the SD card will be deleted.
Default Set	Restore all customer settings to default values.

4.2 Default Setting

Defaults settings are listed below:

Setting Items	Default	Options	Submenu
Language	English	Suomi Deutsch Svenska	
Camera Mode	Photo	Video	
Set Clock	Enter		Adjust Clock
Photo Size	8MP	5MP	
Photo Burst	1 Photo	2 Photos 3 Photos	
Video Size	1280×720	640×480	
Video Length	10 sec	5–60 sec	
Time Lapse	Off	5Min–8Hour	
PIR Trigger	Normal	High,Low,Off	

PIR Interval	5 Sec	0–55 Sec 1-60 min	
Work Hour	Off	On	00:00 – 23:59
MMS Set	Enter		URL, APN, IP, Port
GPRS Set	Enter		Server, Port, APN
Send Mode	Manual	Daily Report, Instant, Off	
Send To	Phone[MMS]	Email[MMS], Email[GPRS]	
Version	Enter		MCU, IMEI
Format SD	Enter		Yes, No
Default Set	Save		

4.3 Send MMS Manually

The Send MMS option will be shown when the setting item Send Mode is selected as Manual.

Choose the image in playback mode and then press Menu to send out. Please note that the images

can only be sent and video cannot be sent. If the SIM card is not inserted, the image cannot be sent as well.

4.4 Laser Pointer

The laser light pointer beam can be turned on as an additional function for pointing at an object or a certain region of interested (ROI). Press * to turn on the laser light in **TEST** mode.



NOTE:

Please note that the laser pointer could be harmful to the eyes if point at other person.

Appendix I: PIR Detection Zone

Figure4 shows Bolymedia's 4 kinds of detection range at different detection angles.

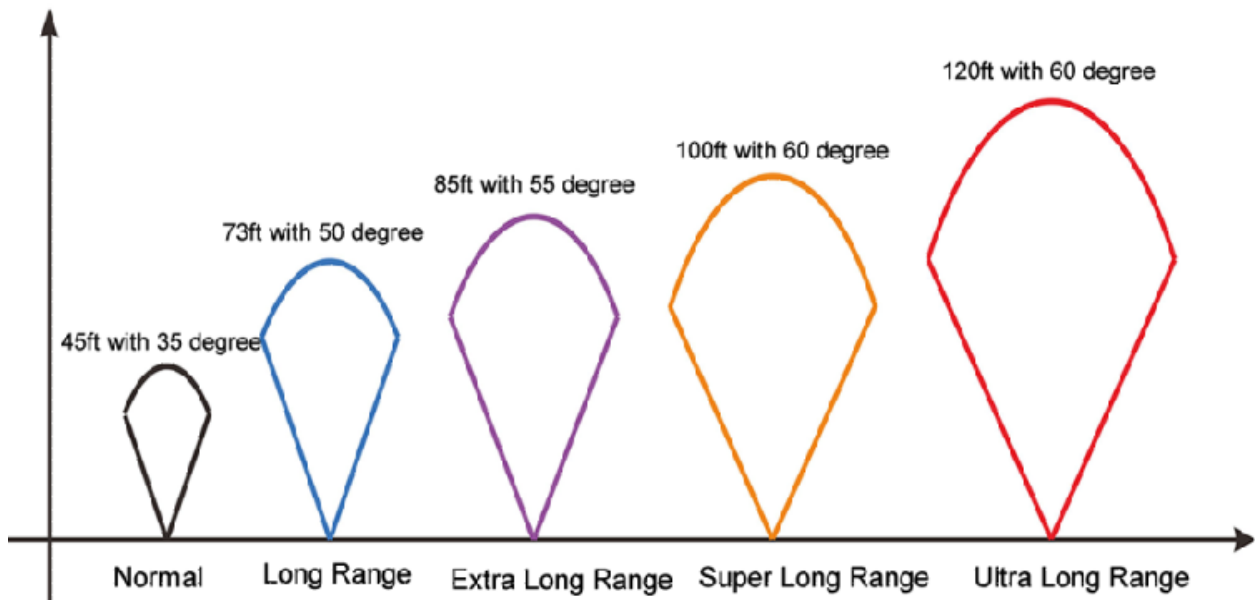


Figure 4 Different detection range

The PIR detection angle (α) is just smaller than the field of view angle (β). The advantage of this design is to avoid empty pictures and get most, if not all, motions.

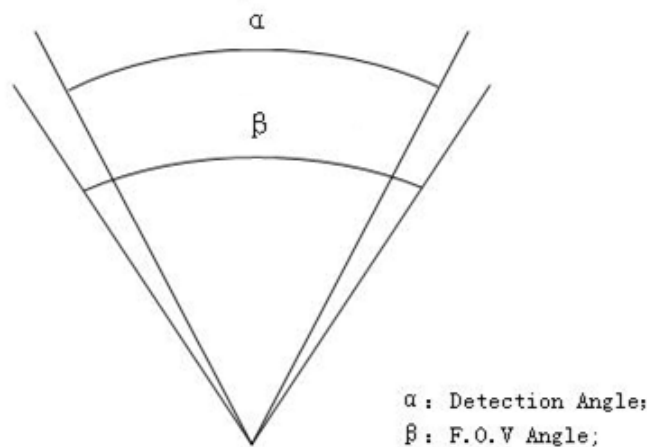


Figure 5 Detection angle VS F.O.V angle

SG550M-8mHD has a new design of PIR and this new PIR is patented. The new patented PIR's detection range is extra long range. The figure 6 shows the compared detection zone between normal PIR and the new patented PIR.

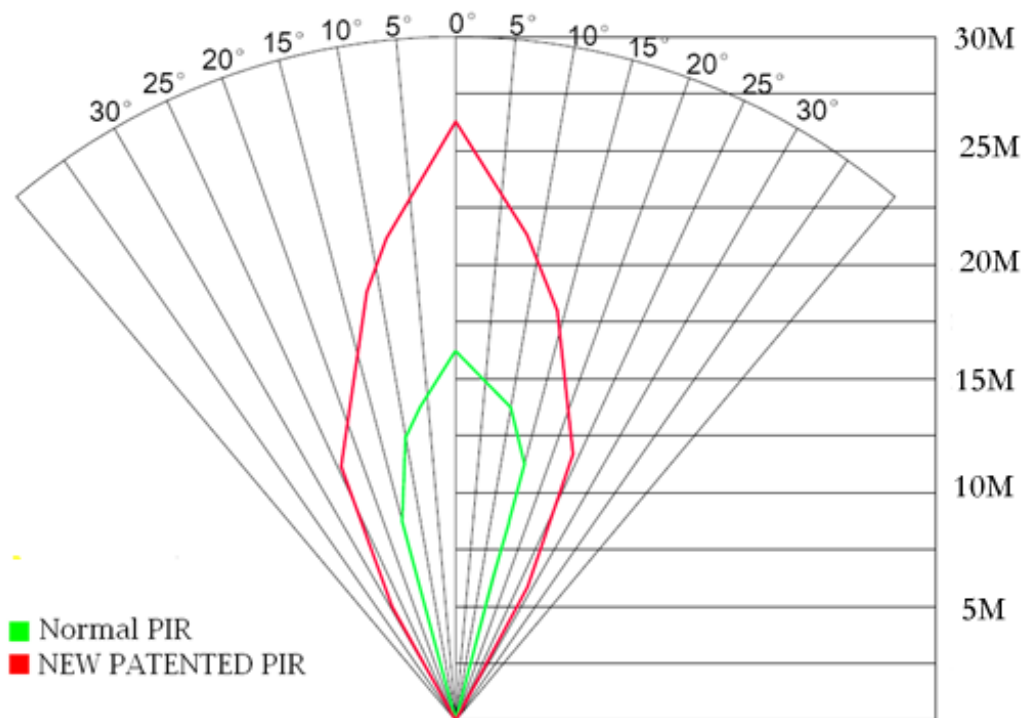


Figure 6 PIR Detection Range

Appendix II : Technical Specifications

Image Sensor	5MP Color CMOS, 8MP Interpolation
Lens	F/NO=2.2 FOV(Field of View)=60°
PIR detection range	85ft
Display Screen	1.5" LCD
Memory Card	From 8 MB to 32 GB
Picture Resolution	8MP = 3264 × 2448 5MP = 2560 × 1920
Video Resolution	1280 × 720 (25fps) 640 × 480 (20fps)
PIR Sensitivity	Adjustable (High/Normal/Low)
Trigger Time	1.2s
Weight	0.30 kg
Operation/Storage Tem.	-20 - +60°C / -30 - +70°C
PIR Interval	0s – 60 min.
Photo Burst	1–3
Video Length	5–60s
Power Supply	8×AA or 4×AA
Stand-by Current	< 0.25 mA (<6mAh/Day)
Display Screen	LCD display on camera
Sound Recording	Available

Mounting	Rope/Belt/Python lock
Dimensions	140 x87 x55 mm
Operation Humidity	5% - 90%
Security authentication	FCC, CE, RoHS

*without battery

AppendixIII: Parts List

Part Name	Quantity
Digital Camera	One
Wireless Remote Control	One
USB Cable	One
Belt	One
User Manual	One
Antenna	One
Warranty Card	One

Website information:

Download the APP software from here:

<http://www.bolyguard.com/Download.htm>

(Version 1.3)