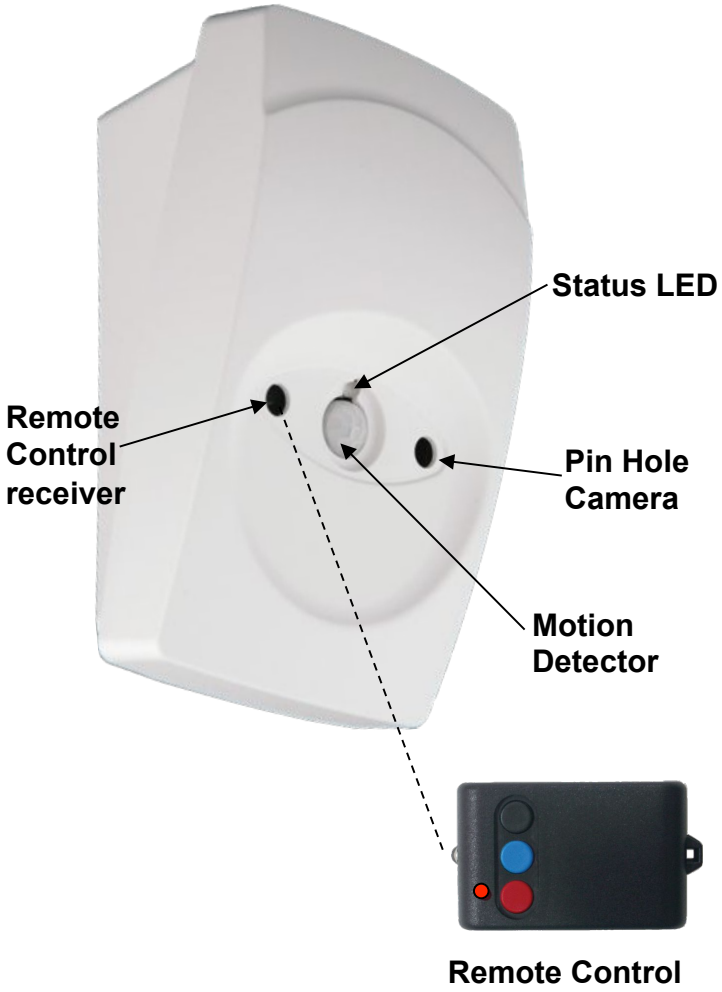
Hidden Camera Surveillance
1300 763235
hiddencamera.com.au

STANDALONE ‘WIRE FREE’ SURVEILLANCE CAMERAS

What is Intruder Cam?



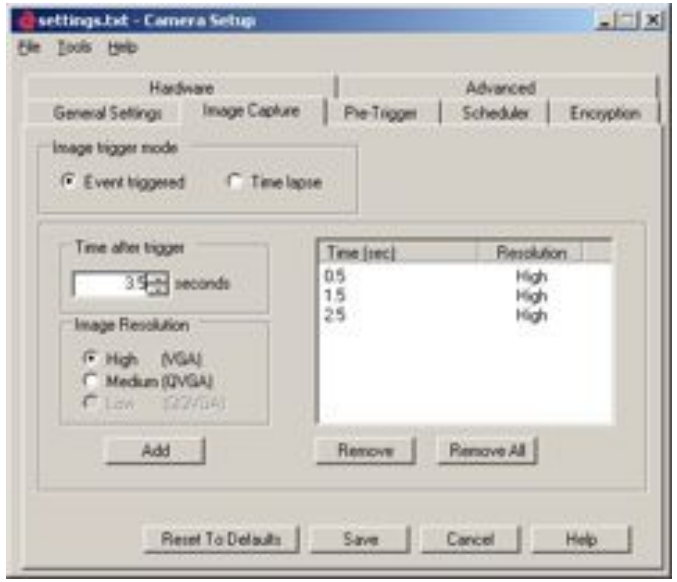
- Compact standalone digital camera utilizing patented **'PSIS'** technology
- Inbuilt motion detector and image storage.
- Operates independently as a portable 'wire free' **surveillance** camera
- Connects to existing alarm systems as a **security** camera.
- Arm & disarm via remote control
- 'Set & forget' operation
- When motion is detected, a series of high resolution color images are captured and stored to a removable memory card. The card can store up to 65,000 images!
- The images can be viewed on a PC or PDA.

PSIS Technology

- **Programmable Still-Image Sampling (PSIS) is a technique whereby the Digilant surveillance Camera operates between CCTV mode and Digital Still Camera (DSC) mode.**
- **The technology is based on a CMOS image sensor running at up to 60fps and a high speed software sampling program which allows the user to program which frames are captured and stored to a buffer when motion or a trigger is detected.**

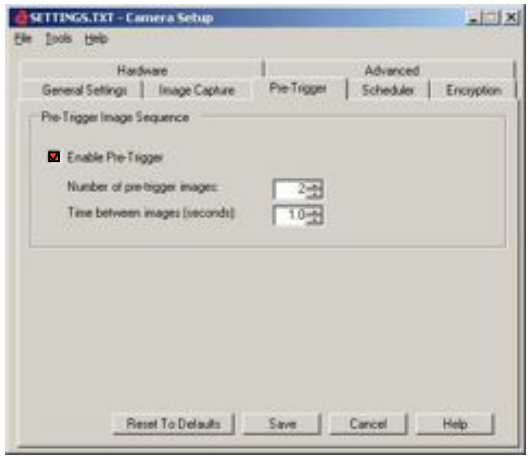
- **When the "sampling sequence" is completed, the captured images are stored to a removable flash memory card.**
- **PSIS also allows a sequence of "pre-trigger" images to be captured before the event, together with the "post trigger" sequence.**
- **This patented technology allows critical images to be captured and stored of anomalous events (intruders, attackers, vandals, terrorists) in high resolution without the quality degradation of CCTV decompressed still images.**
- **These images can then be transmitted wirelessly without the bandwidth limitations of sending complete video footage.**

Operating Modes – Event Triggered



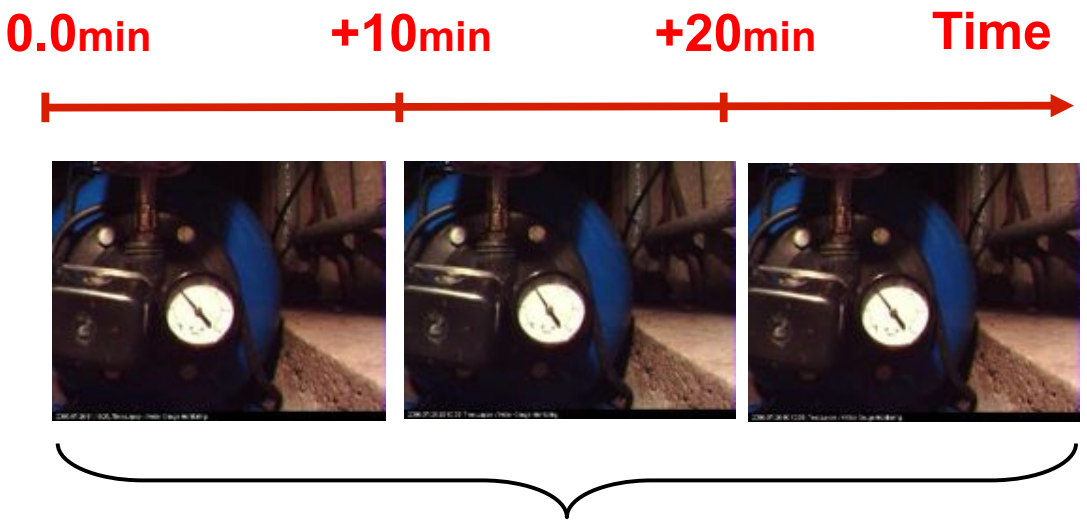
- **Motion is detected (and confirmed?)**
- **The image sequence is then captured according to the settings file.**
- **In this example there are 3 VGA images captured with the first one at 0.5 sec, the next one 1 second later, and the last one 1 second after that.**

Operating Modes – Pre-Trigger



- Pre-trigger Images allow the user to view images before the intruder is first detected
- This can establish if the intruder entered via the door, window or ceiling etc.
- The sequence below shows what the intruder was doing outside the premises before he entered.

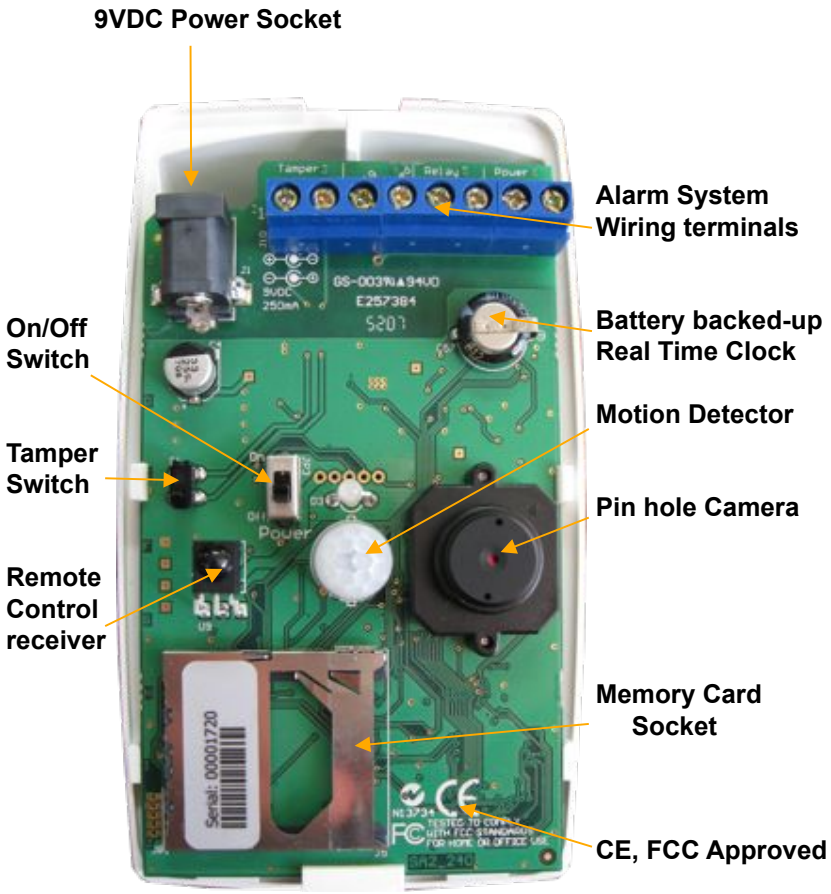
Operating Modes – Time Lapse



Time Lapse Images (VGA) of pump pressure

- **One image is taken at a set time interval continuously.**
- **The resolution can also be set.**

Hardware Description



- **Power Supply**
  - 9VDC plug pack socket
  - 9VDC to 14VDC via terminals 7 & 8
  - 3.7VDC Li-Ion battery via connector on rear
- **Camera**
  - Color or B&W image sensor (640x480 pixels = 0.3Mpixel)
  - Lens module contains 4 miniature precision glass lenses which produce very high quality images
  - There are 3 lenses used in products (Diagonal AOV)
    - Normal (64°)
    - Wide angle (73°)
    - Telephoto (17°)
- **Motion Detector**
  - Compact PIR detector with integrated Fresnel lens
  - High noise immunity from cell phone interference
  - Built-in Digital amplifier
  - Black or white Fresnel lens available
  - 2 types of lenses used:
    - Standard (100° H, 82° V), 64 zones
    - Spot (38° H, 22° V), 24 zones
- **Terminal strip**
  - 1. Tamper 1
  - 2. Tamper 2
  - 3. Trigger
  - 4. Armed
  - 5. Relay 1
  - 6. Relay 2
  - 7. 0 VDC
  - 8. 9-14 VDC

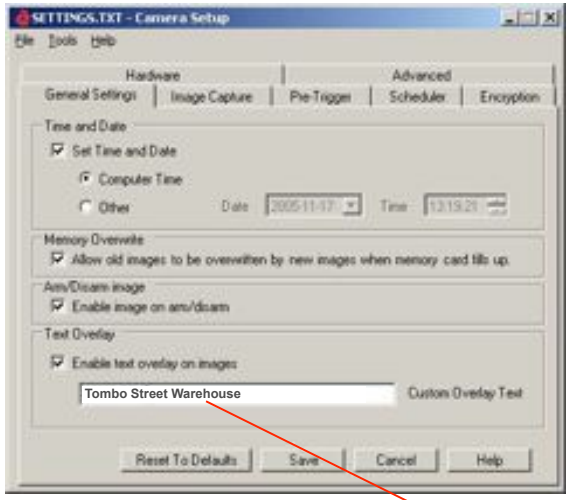
Camera Operation- Settings File

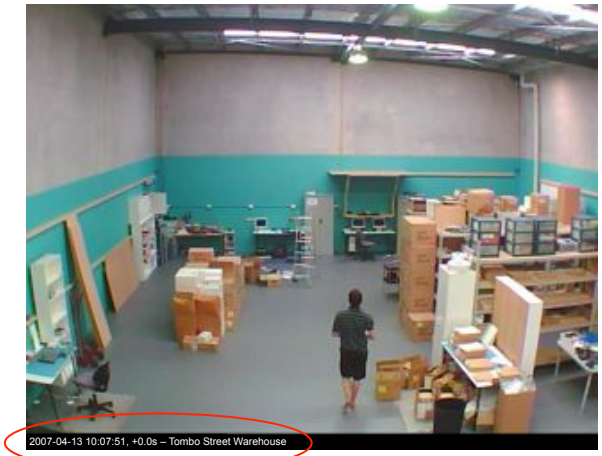
- **The Camera is configured by a “settings” file (settings.txt) which is stored on the memory card. When the Camera is first switched on, it reads the “settings” file and automatically configures itself. It has the following format:**

```
//time: 2000-01-01, 00:01:58---------- • Time & Date – the comments “//” are inserted after the time has been set in the Camera.
version: "standalone-0.14.1.287-201-sa2_1-colour“---------- • Model, Software version number, Hardware version, Image Sensor type (Colour or B&W)
pre_trigger: disabled, 2, 1.0s, qvga, 75---------- • Pre-trigger settings, JPEG compression factor
image: 0.0s, vga, 75---------- • Event trigger settings, JPEG compression factor
time_lapse: enabled, 7.0s, vga, 75---------- • Time lapse setings, JPEG compression factor
encryption: disabled
image_overlay: enabled, “Cash register No. 4857“---------- • Text overlay
module_relay: disabled, 0.0s, infinite, 20.0s, 300.0s • Other settings
module_ir_strobe: disabled
pir_sensitivity: 1
arm_disarm_image: enabled
armed_input: closed
covert: disabled
delay_image_sequence: disabled
early_trigger: enabled
led: enabled
low_power: disabled
low_power_alarm_relay: disabled
memory_overwrite: enabled
pir: enabled
trigger_input: closed
schedule: disabled
```

The settings file should always be changed through the setup software only.

Time & Date – Text Overlay

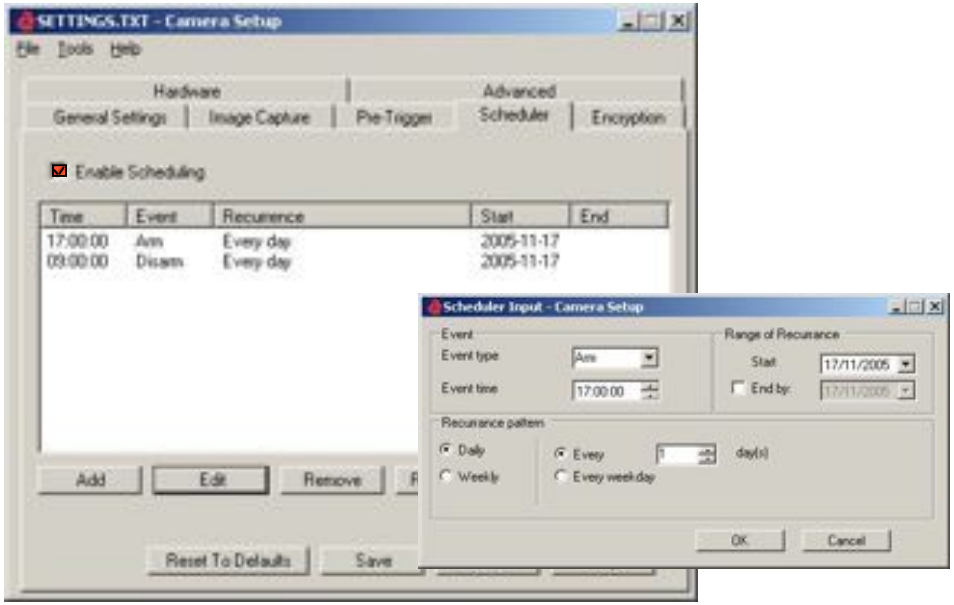




2007-04-13 10:07:51, +0.0s – Tombo Street Warehouse

Date, Time, & Text Overlay

Operating Modes - Scheduler

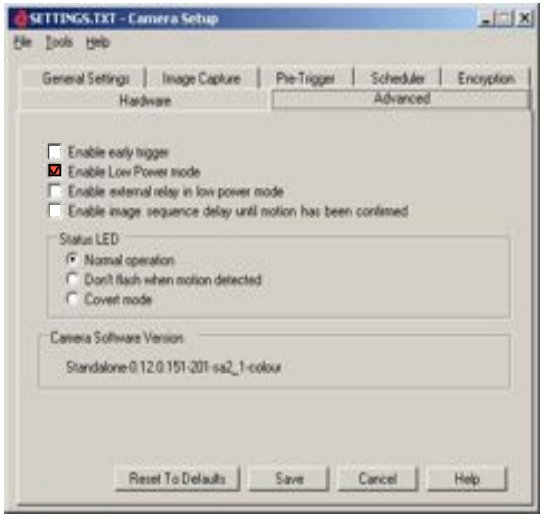


Typical small business scheduler program to confirm employees working hours

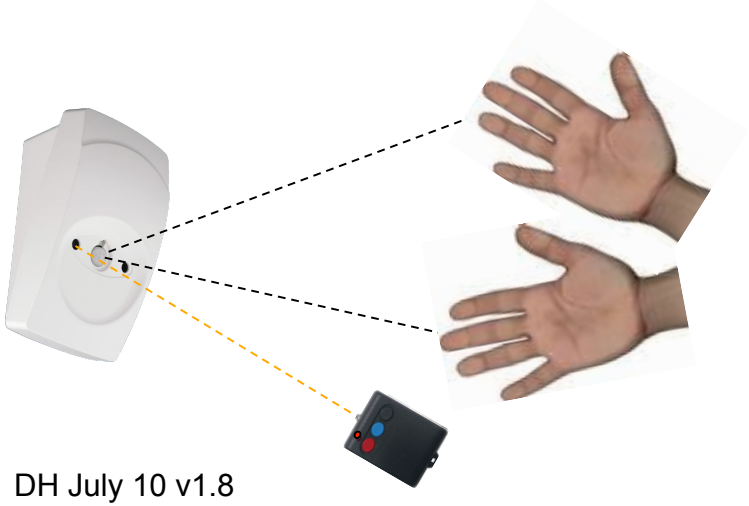
8.30am	**ARM**	**Employees arrive**
9.30am	**DISARM**	
11.45am	**ARM**	**Lunch time**
1.15pm	**DISARM**	
4.30pm	**ARM**	**Employees leave**
5.30pm	**DISARM**	
8.00pm	**ARM**	**Backup if manager forgets**

- **This enables the Camera to operate automatically for long periods of time.**
- **The user can specify exactly when and how often the Camera should be armed and disarmed during the course of a day or throughout the week, and the recurrence per year.**
- **This feature can assist when remote monitoring using “Time Lapse” mode to conserve both battery and image memory.**

Operating Modes – Low Power



- The Camera automatically switches into low power mode when connected to a battery.
- To reduce standby power the following components of the Camera are shut down:
  - Image sensor
  - Video processing engine
  - Alarm relay
  - Remote control receiver
- If however an external 12VDC battery is connected to the terminal strip, the Camera assumes that this is mains power and does not switch into low power mode
- To force the Camera into low power mode when connected to an external power source, enable this setting.



ATTENTION – ACHTUNG

- In low power mode the remote control receiver is turned off
- To ARM or DISARM the Camera with the remote control, wave your hand to activate the motion detector.
- The receiver is now turned on for 5 seconds, allowing time to press a button on the remote.

Accessories

- Internal very high capacity battery powers camera for up to **5 ½ months**.

- Internal high capacity battery operates camera for up to **9 weeks.**

- The backup battery enables the camera to operate during a power failure for up to **2 weeks.**

- Remote control to Arm, Disarm & capture image.

- SD Reader with USB interface

- User friendly installation and setup software for PC.

- 9VDC Plug pack for continuous operation.

- 2GB SD card: 32K images
- 8GB SD card: 210K images
- Automatic setup of camera from memory card.

Products & Accessories

- Intelligent PIR motion detector for visual continuity in Alarm Systems.

- Weather-proof case (IP65) for outdoor surveillance

- Rapid Battery Charger for High Capacity Battery.

- Flush mounting kit for the folder cam, bollard cam, vending machine, and ATM

- Solar Panel for directly operating the camera or complete Alarm System.

- Pocket PC software to setup the camera and view images.

Products & Accessories

Outdoor Camera with relay for external spotlight

- B&W or Color outdoor Camera with internal or external relay board for switching Infrared or halogen spotlight.
- Operates for up to 9 months on internal rechargeable battery pack and can also be mains or solar powered.
- Ideal for Covert surveillance, bird watching and livestock monitoring

Siren Strobe Alarm

- Complete camera based alarm system.
- Can be mains or solar powered and can also run from its internal backup battery for up to 9 weeks.
- Ideal for Rental homes, Sheds, Caravans and Boats.

Applications-
Boats and Caravans

Siren Strobe Alarm

- Complete camera based alarm system.
- Can be mains or solar powered and can also run from its internal backup battery for up to 9 weeks in standby.
- Ideal for Rental homes, Sheds, Caravans and Boats.

Caravan Alarm System

External Siren Strobe Alarm

Internal Camera Unit

- Rugged and mobile Camera based alarm system
- Independently powered by one small solar panel
- Easy to install

Applications-
Camera Based Alarm System

- **The "Security System" (SS) version is a low cost, entry level Camera for the home and small business.**

- **Easy upgrade of existing alarm systems enabling image recording capability.**

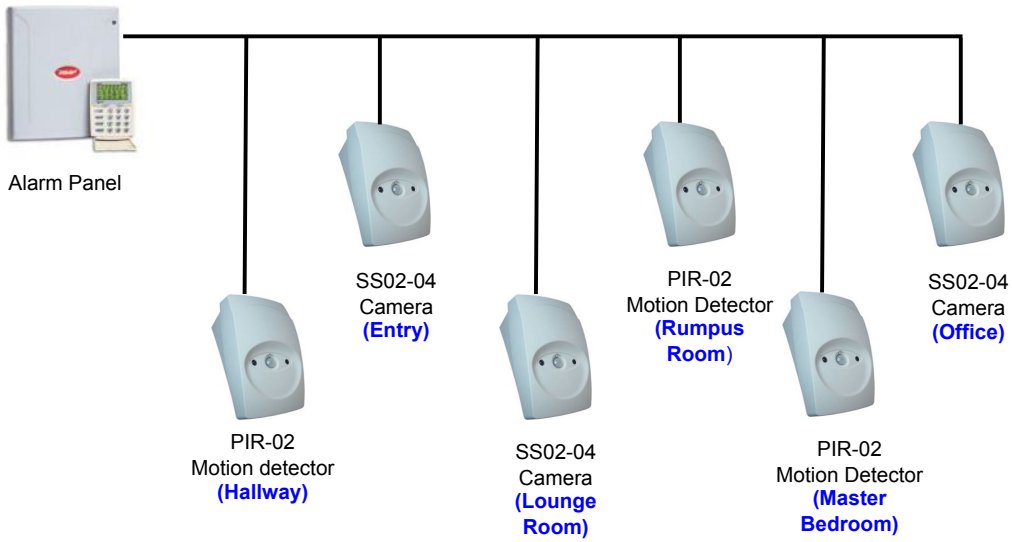
- **Drop in replacement for existing motion detectors.**

- **The SS version comes pre-programmed with all the settings required for the alarm system application.**

- **Installation and setup takes only a few minutes.**

- **The complementary motion detectors are identical looking to the cameras and can deceive intruders, preventing vandalism of the cameras.**

Typical Alarm Installation



Bedroom Break-in

Living Room

Retail Surveillance

Resolution is good enough to identify the DVD!

Employee Stealing Cash

Shop Lifting

Employee Stealing DVDs at Inwards Goods

Applications-
Domestic & Office Security

Car Park

Living Room

Factory

Warehouse

IMAGE QUALITY

Farm Paddock

Rural 'Field Day' at dusk

McKay Airport

Retail Store

CM-Cam

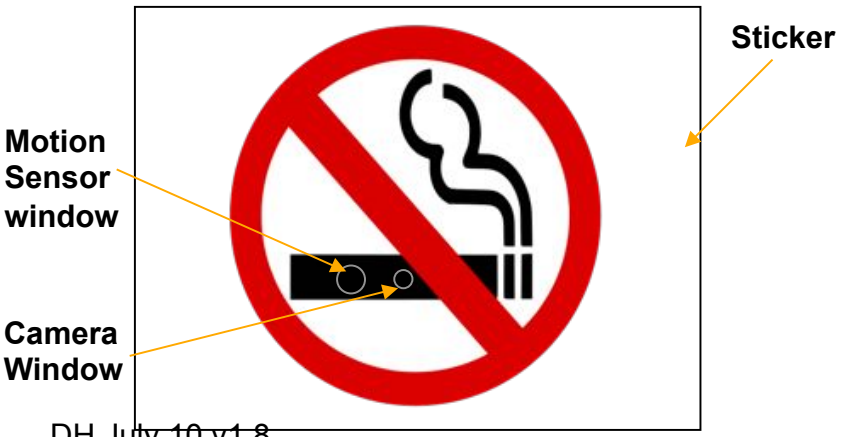
- Covert Mount (CM) Cam is a small standalone Digital Camera with an inbuilt Digital Video Recorder (DVR) that can be Covertly mounted behind any flat surface.
- Small size (65 x 58 x 28 mm)
- Stores up to 32,000 VGA colour images before overwriting oldest image
- Typically 2 weeks of image history on the memory card at any time!
- Inbuilt motion detector and image storage.
- Operates independently as a covert surveillance camera
- Colour or Monochrome Camera with a choice of 2 wide angle & 3 telephoto lenses
- 'Set & forget' operation
- When motion is detected, a series of high resolution color images are captured and stored to a removable memory card
- The images can be viewed on a PC or PDA.
- Optional GPRS modem to send images to a monitoring station
- Supplied with 4 self adhesive standoffs to suit standard 3.3mm & 3.7mm lenses

Applications-

Phone Booth Camera

- The CM-Cam is mounted behind the metal front panel directly above the Payphone.
- 2 holes are drilled in the metal panel for the Camera lens and motion detector.
- The holes are then disguised with a special sticker containing an optically clear 5 mm window and a 10mm black window for the motion detector.
- If for example a ‘No Smoking’ sticker is chosen, then the 2 holes blend in with the black shape of the cigarette.
- The Camera’s 240V /5VDC power supply can be mounted in the rear of the fluorescent light housing and then the cable run out through the cable duct to the panel below.

A Camera is mounted behind the metal front plate



The Camera in daytime operation








- **This is the most secure option as the camera is mounted behind the metal front plate and is virtually impossible to damage**
- **If the label is spray painted, the perpetrator's photo has already been taken! The sticker can be easily replaced**
- **As the front panel is angled down, the Camera is in the best possible position to capture the person in the phone booth.**

Xternal-Cam®

B&W Camera with IR spotlight

Colour or B&W Camera

- **B&W weatherproof outdoor Camera with inbuilt synchronized Invisible Infrared spotlight.**
- **Operates for up to 5 ½ months on internal rechargeable battery pack (without solar panel).**
- **If solar powered, it can capture up to 35 images per day indefinitely without requiring the battery to be recharged**
- **Ideal for Covert surveillance, Farm diesel fuel tank monitoring, bird watching and livestock monitoring**
- **Optional GPRS modem sends images to a monitoring station or mobile phone**
- **Optional plug-in interface board for alarm, external power etc**
- **Fully weatherproof housing (IP65)**

Wireless Xternal-Cam®
Features

- **Emails images directly to a mobile phone, PC, or Monitoring Station**
- **After a break-in, the number of images to be emailed can be controlled as well as the 'lockout' time. This prevents email overload to the receiver's mobile phone or Monitoring station.**
- **All images are always stored simultaneously to the SD card as well!**
- **All settings and commands are configurable via SMS**
- **The modem can be programmed to wake up every 't' minutes to check for SMS messages**
- **Remote control of Camera functions via SMS**
- **The modem can run in its own 'time-lapse' mode independent of the Camera's capture sequence.**
- **In between activations, both the Camera and Modem shut down into Ultra-Low Power modes**
- **Modem automatically emails warning message when battery is low**

B&W Camera with IR spotlight and GPRS Modem

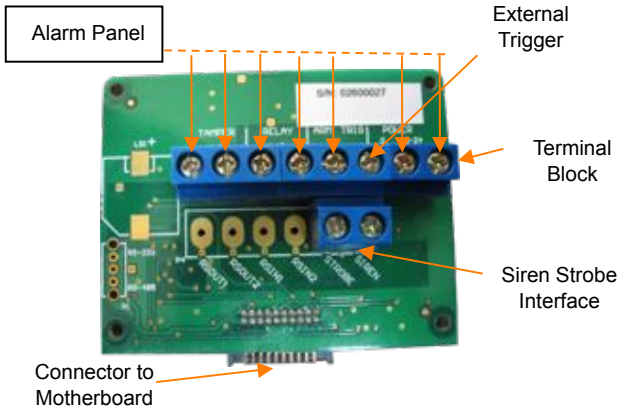
Products & Accessories

Multi Purpose Interface Board (MPIB)

The (MPIB) is a plug-in interface board that enables many external interfaces to be connected to the SA03 mother board.

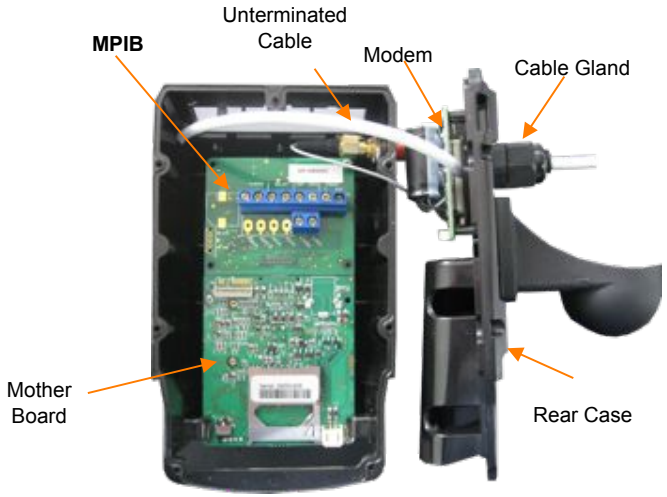
These include:

- **Alarm Panel with tamper and ARM inputs**
- **12VDC battery or power supply**
- **Solar Panel (external)**
- **External triggers from window or door switches**
- **Siren Strobe unit**

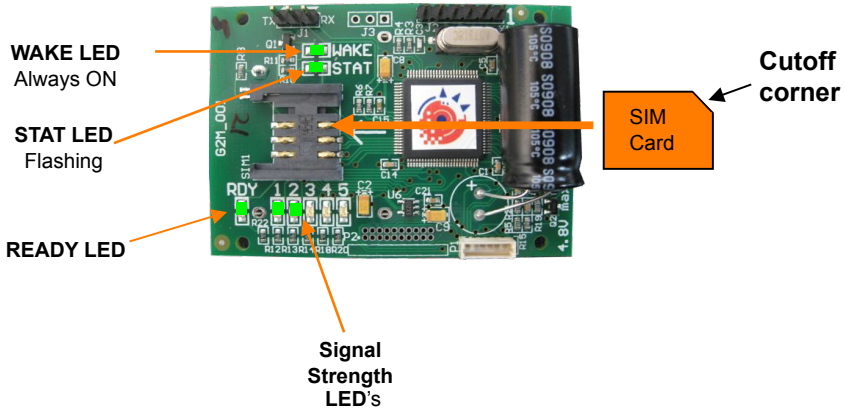


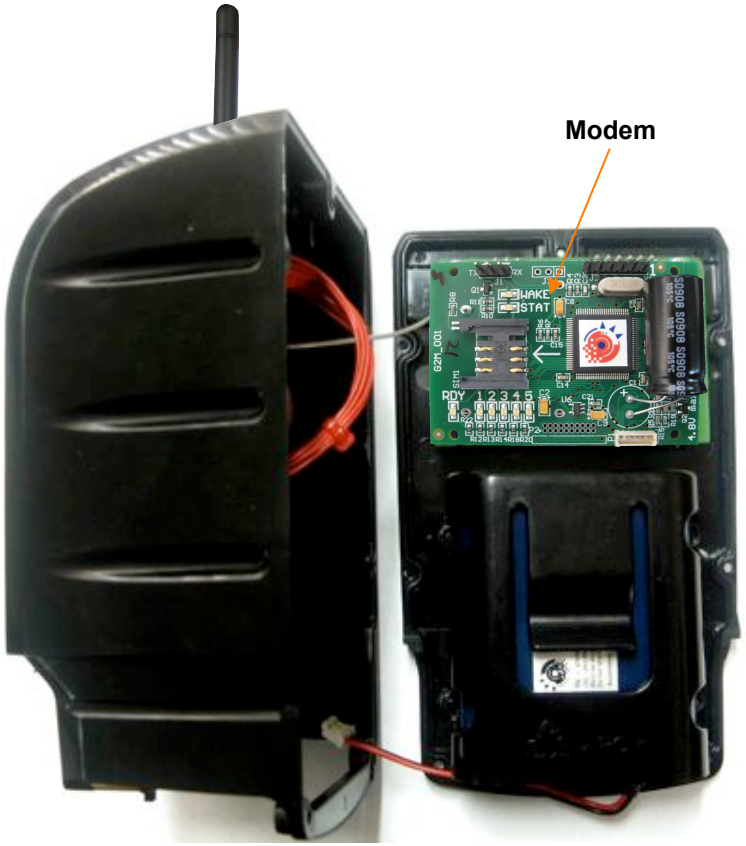
Terminal Block Description

- **Power:** This allows an external voltage source (9 – 24VDC) to power the Camera
- **Trigger:** This allows an external trigger to activate the Camera (connect to 0V)
- **Arm:** This allows the Camera to be remotely armed by an Alarm Panel or other source.
- **Relay:** When the Camera is activated, the Relay contacts are opened (or closed)
- **Tamper:** If the lower compartment of the Xtern-Cam is removed to access the Camera and memory card, the tamper switch will open.
- **Siren/Strobe:** An external Siren/Strobe unit can be controlled by the Camera.



GPRS Modem Description





Specifications

Cellular Bearer: GSM + GPRS Class 10

Radio Bands: Quad band 850/900/1800/1900

Approvals: R&TTE, CE, GCF, FCC, PTCRB, China RTE, AT&T

Nominal Sensitivity: 850/900 MHz Rx: 104dBm

Power Consumption: Sleep: 100uA , GPRS (33dBm): 373mA

Modem Commands

- **The Modem is extremely flexible, intelligent and enables the Camera to operate in 5 application modes**
- **The modes can be programmed via SMS commands ie**
  - **Arm** — **Arms Camera**
  - **Disarm** — **Disarms Camera**
  - **Snap *n t*** — **Capture *n* images every *t* minutes**
  - **Mail** — **Reports APN setting**
  - **Stat** — **Status information**
  - **Test** — **Sends a test email**
  - **Restart** — **Restarts Modem**
  - **Eventimages *n*** — **When an 'event' occurs, capture only *n* images**
  - **Eventtime t** — **After *n* images have been sent, the modem will not send anymore for *t* minutes (The Camera is still recording!)**
  - **Polltime t** — **The modem wakes up every t minutes to check for SMS messages**
  - **Time** — **Sets time in Modem**
  - **Date** — **Sets date in Modem**

- **The following Mail setting must be programmed to enable GPRS operation**
  - **APN: (GPRS Access Point Number of local service provider)**

Application Modes

The applications can be grouped into 5 major functional modes of the Camera & Modem. ie

- **Break-In mode, Motion activated – Powered (Low activity)**
  - **Extpower = on - Modem is on all the time**
  - **Eventimages = 10, eventtime = 60 (The user can send a snap n t command at any time after the break-in)**
- **Break-In mode, Motion activated – Battery operated (Low activity)**
  - **Extpower = off**
  - **Eventimages = 5, eventtime = 30**
  - **Polltime = 15 (This enables the user to send a snap command if required after the break-in sequence for more images)**
- **Surveillance mode, Motion activated – Battery operated (Medium to high activity)**
  - **Extpower = off**
  - **Eventimages = 3, eventtime = 1**
  - **Polltime = 15**
- **Surveillance mode, Modem controlled 'time lapse' – Battery operated (High activity but status monitoring only)**
  - **Extpower = off**
  - **Eventimages = 0, eventtime = 0**
  - **Snap 0, 60 (The modem captures and sends 1 image every 60 min. The camera still records all motion activated images to the SD card)**
- **Surveillance mode, Camera controlled 'time lapse' – Battery operated (Low to high activity)**
  - **Extpower = off**
  - **Eventimages = 1, eventtime = 0 (This allows 1 image to be received and sent with no lockout time)**
  - **Polltime = 15**

Applications-
Graffiti & Vandalism surveillance

Before

After

Graffiti

B&W Camera with Night vision

Hats & clothing Used as evidence

The Graffiti Attack

Spray Can

Colour Camera

- **Graffiti is one of the greatest vandalism problems facing councils today.**
- **A ‘sting’ should be set up with at least 3 cameras using B&W and colour.**
- **If facial recognition is not possible, the Police can use clothing and hats to identify and convict the offenders**

Applications-
Illegal Rubbish Dumping

Identify License plates during daytime and at night

B&W Camera with Night vision

Catching the villains in the act!

Colour Camera

- Illegal rubbish dumping is becoming a major problem for councils today.
- A ‘sting’ should be set up with at least 3 cameras using B&W and colour cameras.
- Multiple cameras enable license plate recognition as well as identifying the persons involved.
- The images have been successfully used as evidence in court

Applications-
Private Property Protection



This man was caught stealing his neighbour's hand-carved business sign

B&W Camera with
Night vision



The villain was caught in the act!

Colour Camera

- **A concerned property owner purchased an Xtern-Cam after her sign was stolen 2 times.**
- **The Camera was covertly mounted in a tree overlooking the sign.**
- **The vandal/thief was caught in the act and identified as the next door neighbour!**
- **The images were used in a court of law to convict the offender.**

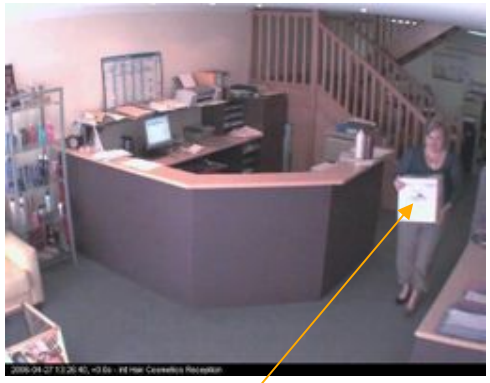
Applications-
Construction site surveillance

Distinguishing features used as evidence

- **Remote locations where heavy machinery is left unattended overnight or on weekends, attracts many types of criminals:**
  - **Steal fuel**
  - **Steal machinery or accessories**
  - **Vandalise the machinery and equipment**
- **The "rednecks" in these photos broke into the restricted area and stole fuel from the earthmoving equipment.**
- **They were apprehended by the Police the following day**

B&W Camera with Night vision

Applications-
Warehouse Surveillance



Colour indoor Camera

Warehouse Office

It monitors who takes what & when

Colour Camera

- Monitoring the flow of goods in and out of warehouses has become very important for both Customer service and internal theft.
- This application shows a cosmetics company who export their products all around the world.
- 5 Cameras were installed in total and saved the owner nearly $3000 compared to CCTV.

Inwards Goods

You can see clearly how many boxes arrive and where they are put by whom & when

Primate Monitoring

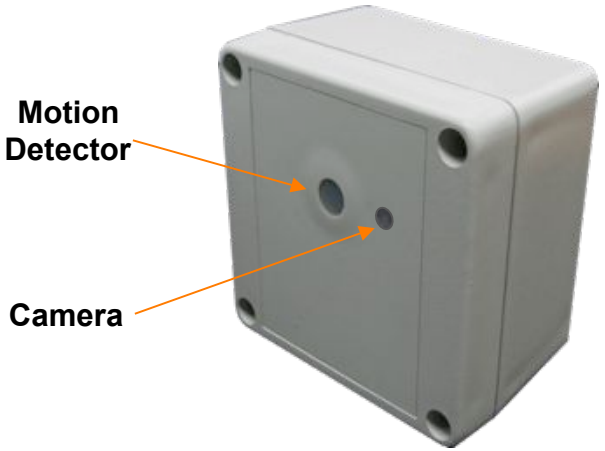
Colour or B&W Camera

Primate-Cam™

B&W Camera with Night vision

- Portable/relocate-able
- Cage with camera attached, can be hosed clean daily
- Patented ultra low power technology
- NO WIRES!! - Up to 5 month battery standby
- Motion activated or time-lapse mode
- Sophisticated scheduler
- Remote control for Arm, disarm & 'capture image'
- Supports up to 2GB memory cards
- Stores up to 65,000 VGA photos (B&W)
- Solar powered (optional) or 9VDC power supply

Mini Xternal-Cam®
Features



Mini Xtern-Cam

- Small discrete outdoor surveillance camera
- High sensitivity image sensor for low light operation
- Standalone operation from 7.5Ah battery with 5 ½ months standby
- Small palm sized camera for unobtrusive surveillance
- Rugged weatherproof case
- Set and forget operation
- Ideal for monitoring parking garages, personnel entrances and farm gates.

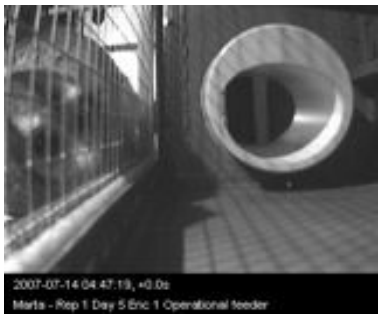
Wildlife Monitoring

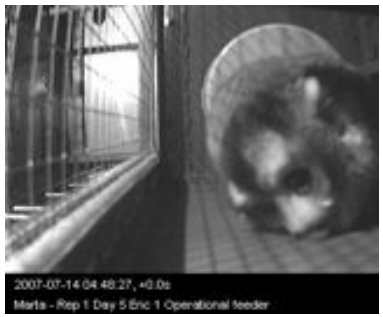
- **Automated husbandry system using implantable temperature-recording microchips**

- **The automated husbandry system involves the use of implanted temperature-recording microchips linked with scanners to initiate the provision of food, sounds, smells, medications and toys to individual animals while also allowing access of specific individuals to various parts of the enclosure.**

- **A prototype automated system has been developed and tested with captive owl monkeys:**

B&W Camera





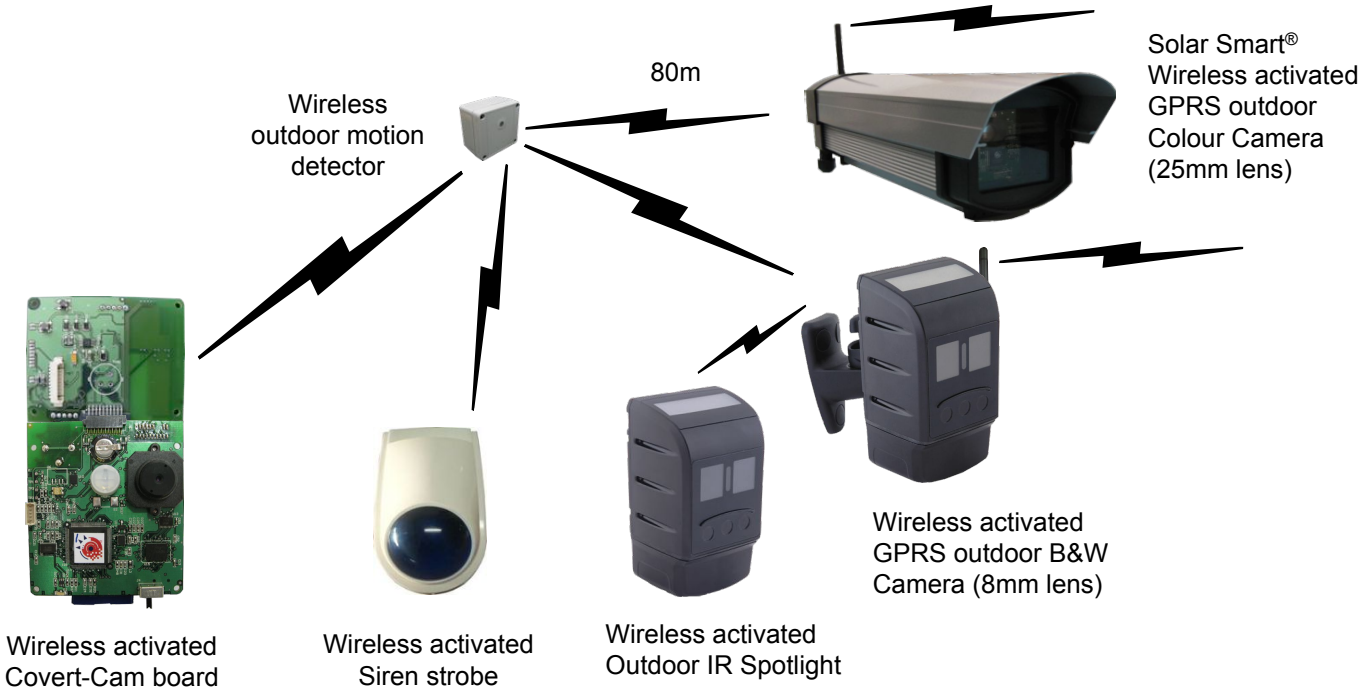
Applications-
Bird Watching
Animal Behaviour

- Solar powered Camera mounted in weather- proof case in a tree
- Time lapse mode with 1 photo every 5 sec
- Scheduler turns off camera at night
- QVGA resolution would give 1 weeks monitoring

- Solar powered Camera mounted in weather- proof case on a tree next to feeder
- Motion activated
- VGA Resolution gives brilliant quality photos.

Wireless Activated Surveillance Camera (WASC) System

- The *Wireless Activated Surveillance Camera (WASC) System* is a unique combination of wireless enabled Surveillance Camera's, Wireless IR Spotlights and PIR's, allowing covert surveillance of difficult subjects in remote or unattended locations.



Description

- The WASC system consists of a battery operated Wireless PIR (WPIR), multiple networked wireless-activated cameras, and wireless activated IR spotlights, all positioned in strategic locations to best photograph and illuminate a vehicle or person's movement.

- Using the Digilant's unique programmable image-sequencing feature, each Camera can capture images relevant to its unique position and at the appropriate times, when triggered.

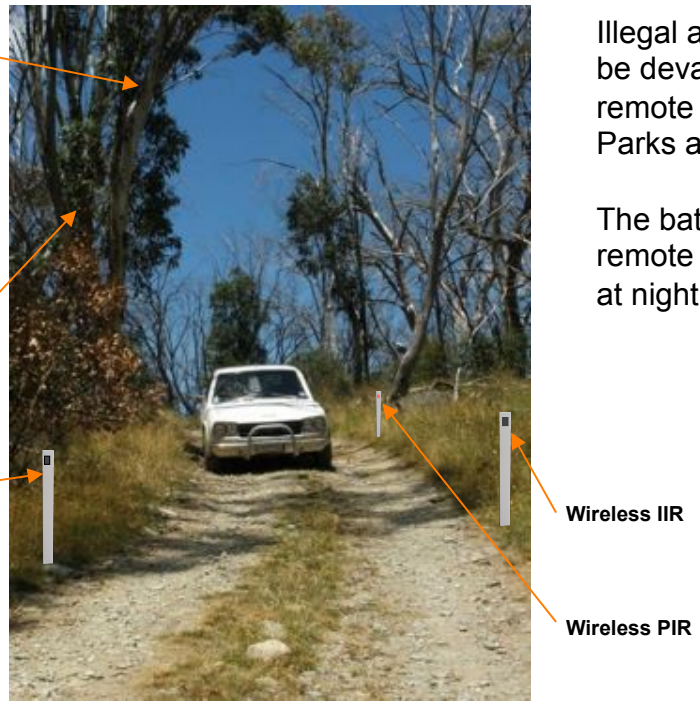
- The WPIR for example, could be mounted in a letterbox at the entrance of a business premise and a colour Camera 30m away with a 16mm lens focused on the driveway. Any person walking or driving a vehicle onto the property can be clearly identified. The camera can even be mounted inside the premises behind a window ie.

WPIR mounted in the side of the letterbox

Features

- Unique ‘Wire-Free’ networked outdoor surveillance system for remote locations
- Worldwide 2.4Ghz ISM band operation with high security addressing
- 16 bit CRC data integrity verification
- Solar Smart® technology for extraordinary long battery life
- WiFi, Bluetooth, Zigbee and GSM interference tolerant
- Typical range 100m outdoor, 33m indoor (1Km with external antenna)
- Connect up to 60 networked PIR’s to one wireless Camera
- Point to multi-Point and Multi-Point to Multi-Point network configurations

PROTECTING NATIONAL PARK ACCESS USING THE WASC™ SYSTEM



Illegal access to National Parks by 4WD vehicles and Trail Bikes can be devastating to the environment. Identifying vehicles in these remote locations can be very difficult especially when they access the Parks at night time.

The battery operated **WASC** system enables full image monitoring of remote roads and tracks to identify all vehicles entering illegally even at night.

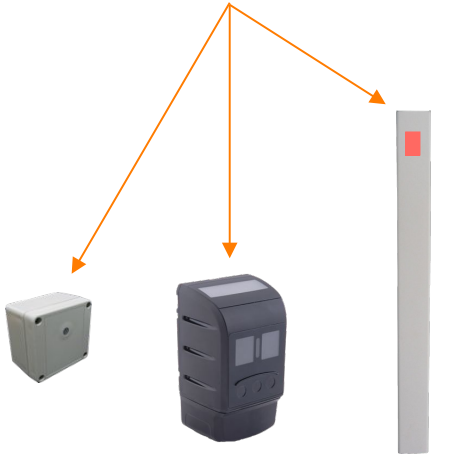
In this scenario, special plastic 'white posts' are positioned on the side of the road which contain a combination of wireless PIR's and IR spotlights. Cameras with telephoto lenses are then positioned in trees to capture both the rear and front licence plates. To make the white posts less obvious in remote locations, up to 20 posts can be easily positioned on both sides of the road in a specific section, however only 2 or 3 of these contain the **WASC** components.

The vehicle approaching the first white post containing the WPIR will activate the **WASC** system. The wireless cameras have different programmed image sequences, determined by their position and when triggered by the WPIR, they begin to capture images exactly when the vehicle is in the ideal position. The Camera also has a separate wireless IR spotlight controller to synchronise the wireless infra-red spotlights so that each time an image is captured in the sequence, the remote IR spotlights are synchronised. The IR spotlights can be positioned on each side of the road.

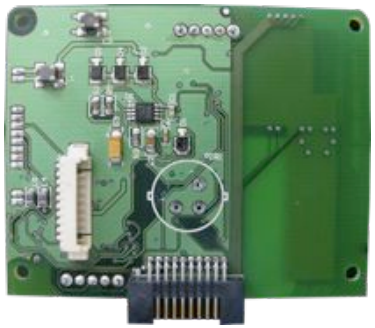
System Components

PWTM

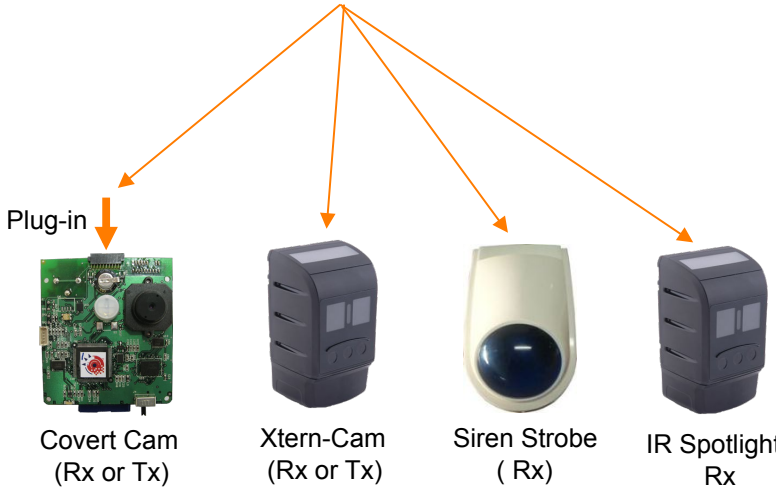
Wireless Transceiver Module with PIR



WTM

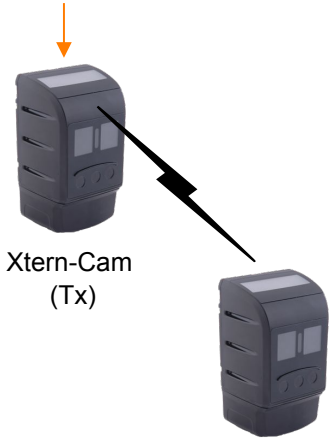


Wireless Transceiver Module
Rx = Receiver, Tx = Transmitter

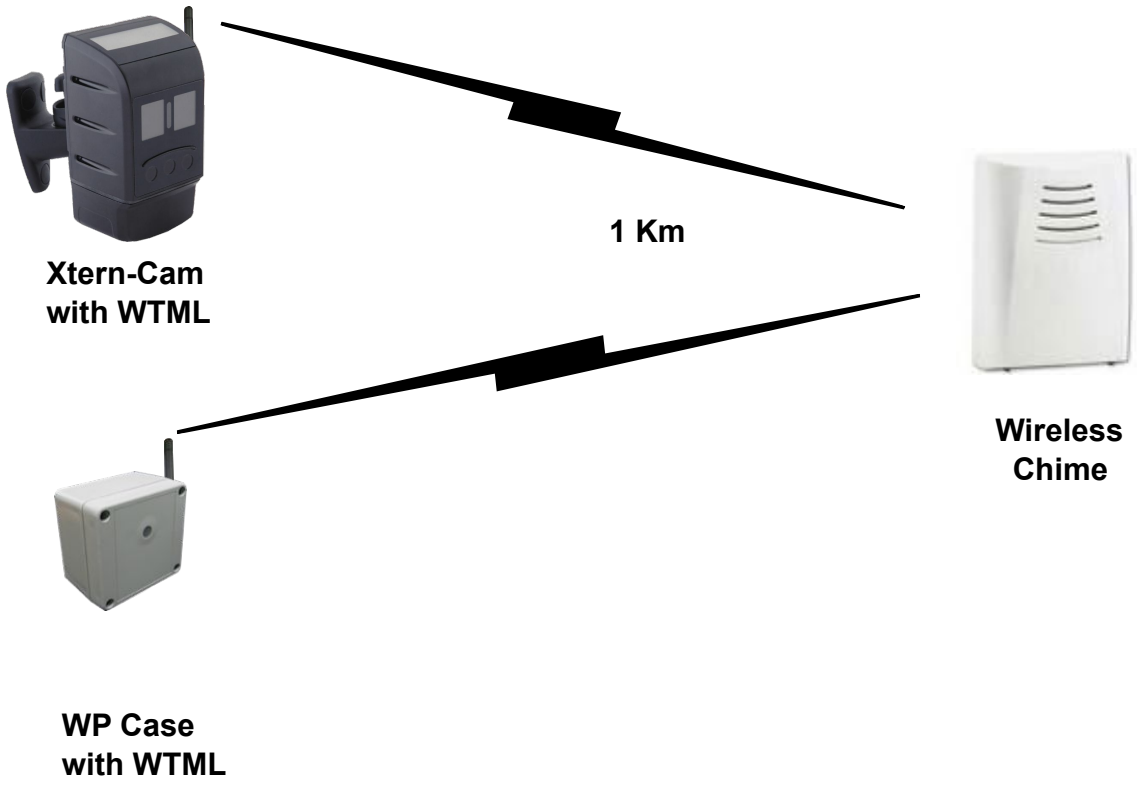


WTMI

Wireless Transmitter Module
with IR synchronisation

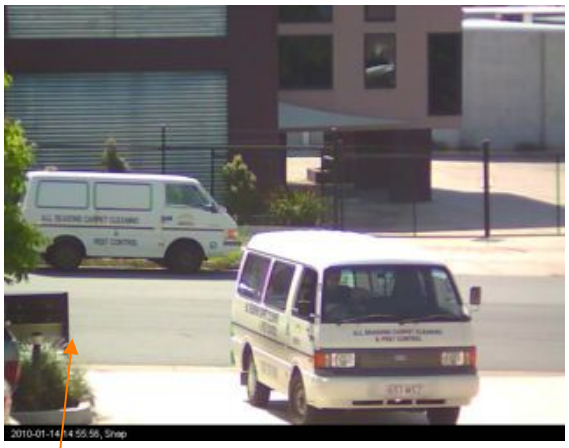


Gate Alert



Graffiti Applications

- Covertly photographing and identifying Graffiti vandals can be achieved using close proximity wireless motion detectors and wireless activated cameras with telephoto lenses, positioned further away. The Wireless GPRS Camera then sends the images immediately to a monitoring station which enables Security or Police to immediately attend the Graffiti scene and apprehend the offenders.
- Using the Digilant camera's unique programmable image-sequencing feature, each Camera can capture images relevant to its unique position and at the appropriate times, when triggered.
- The motion detector for example, could be mounted in a letterbox at the entrance of a business premise and a Camera 30m away with a telephoto lens focused on the driveway. Any person walking or driving a vehicle onto the property can be clearly identified.



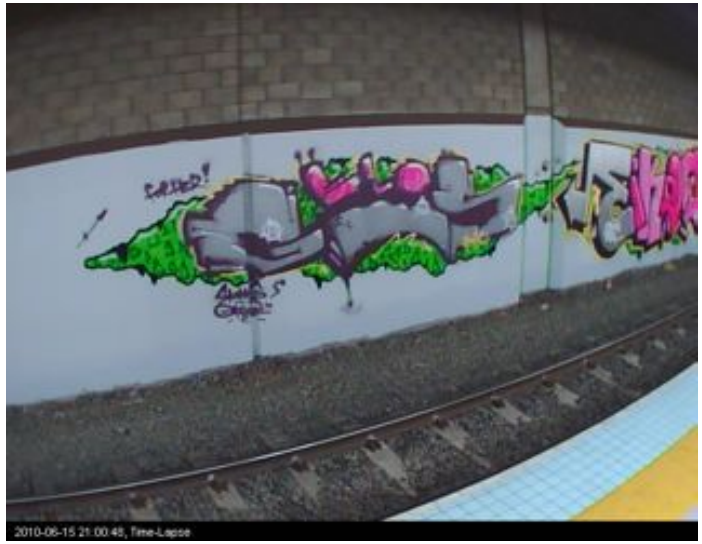
Vehicle Monitoring!
Wireless motion detector mounted in letterbox

Graffiti Vandals caught in the act

Spray Can

Construction site Graffiti monitoring

Night-time Colour Images of Graffiti at Toowong Station (QLD)



Night-time B&W Images of Graffiti at Toowong Station (QLD)

Dark area is illuminated

With Infra-red Illumination

THE GRAFFITI 'STING' USING THE GRAFFITI SURVEILLANCE SOLUTION (GSS)

Wireless GPRS B&W Camera with Telephoto lens ⑦

③ - Wireless PIR hidden in Fence

Dummy Electrical Box:

① - Wireless B&W Camera with IR facing north

② - Wireless B&W Camera with IR facing south

Wheelie Bin with:

- Wireless B&W Camera with invisible IR ④
- Wireless PIR ⑤
- Wireless IIR ⑥

Functional Linking

1 Triggers **4, 6, 7**

2 Triggers **4, 6, 7**

3 Triggers **2, 6, 7**

5 Triggers **6, 2, 7**

The GSS system now enables law enforcement officers and council security officers to catch and prosecute the Graffiti Vandals. In this scenario, the target wall is monitored by wireless motion sensors, wireless activated cameras and the scene illuminated by wireless activated Invisible IR spotlights. The layout is as follows:

1. **The Wheelie Bin is used to house a wireless covert camera facing away from the target wall to photograph and detect anyone approaching the area. In the other side of the Bin is a wireless PIR and wireless IR spotlight, to detect and illuminate anyone in the target area.**

2. **The Dummy Electrical Box houses two wireless B&W Covert Cameras both with IR spotlights to detect and photograph persons entering the area from both directions, however they also act as a transmitters to trigger other devices.**

3. **A wireless GPRS camera with telephoto lens is mounted on an electric pole covering the Graffiti scene and a wireless PIR is mounted in the fence to trigger all cameras.**

Rail Level Crossing Application

Rail Authorities require the following to be monitored (only while the red lights are flashing):

•Vehicles traversing the crossing area

• Vehicles within the designated crossing area

• Pedestrians within the designated crossing area

- The Level Crossing must be viewed with a wide angle Camera to include the whole area of interest
- The Cameras monitoring each of the ‘traversing’ areas must have telephoto lenses to identify vehicle registrations.
- All Cameras must locally store the images for a minimum of 30 days!
- All or some of the Cameras must have the ability to send images automatically to a central location (or on request)

Capturing Vehicle Registration Plates

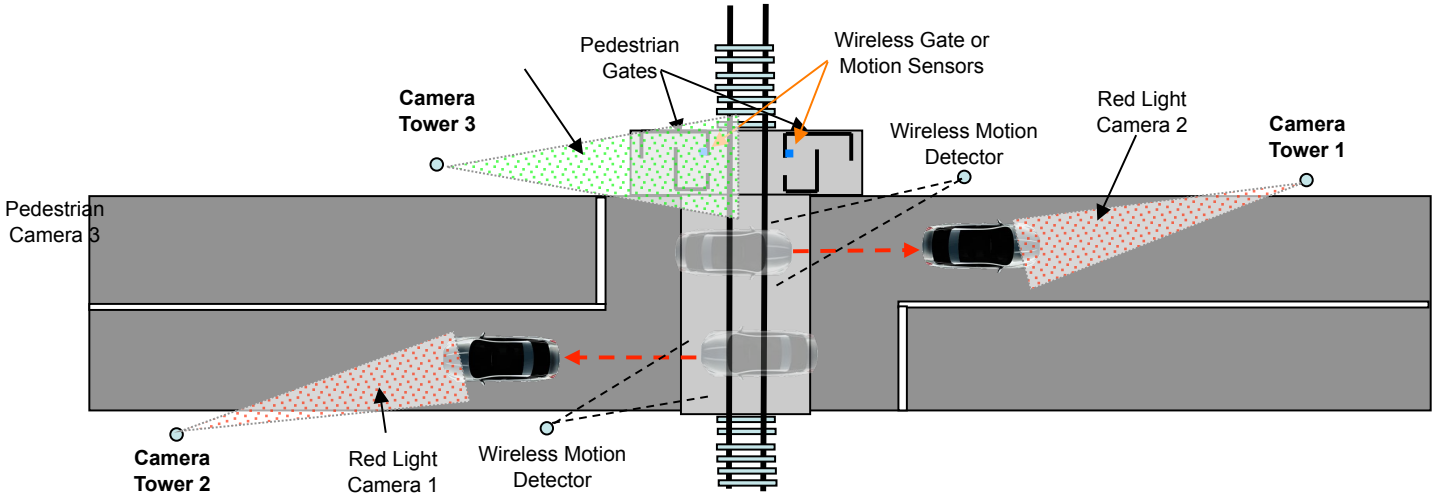
- To reliably capture registration plates, a wireless PIR can be positioned to face the rear of passing vehicles. It is then triggered by the vehicle's thermal image which inturn activates the camera.
- The camera's 'post trigger' image sequence is fully programmable such that several images will contain a clearly visible registration plate depending on the vehicle speed. Even at 20m distance, the 8mm lens still identifies the registration plate
- For very high speed monitoring, the patented '**Pre-Trigger**' feature enables the user to go back in time and see images of the vehicle approaching the level crossing before the sensor has been activated. In this scenario, the camera would be facing the oncoming traffic but getting triggered as the vehicle traverses the level crossing.
- Using a 16mm lens with a colour camera, enables the camera to be up to 30m from the surveillance area and still identify registration plates

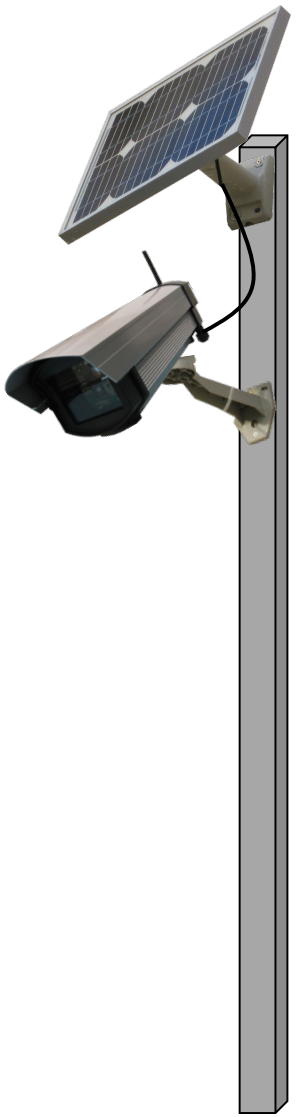
16mm lens - 30m Distance

8mm lens - 10m Distance

8mm lens - 20m Distance

Camera positioning using wireless motion detectors





Camera Tower

- Camera 1 & 2 are 'Red Light' cameras with telephoto lenses triggered by their respective wireless motion detectors. They send images back to a control room via GPRS modem when triggered.

- Camera 3 is focused on the Pedestrian area and is triggered by the wireless gate or motion detectors.

- Camera 4 is mounted on tower 3 and has a wide angle lens to cover the whole level crossing. It sends images back to a control room every hour via GPRS modem.

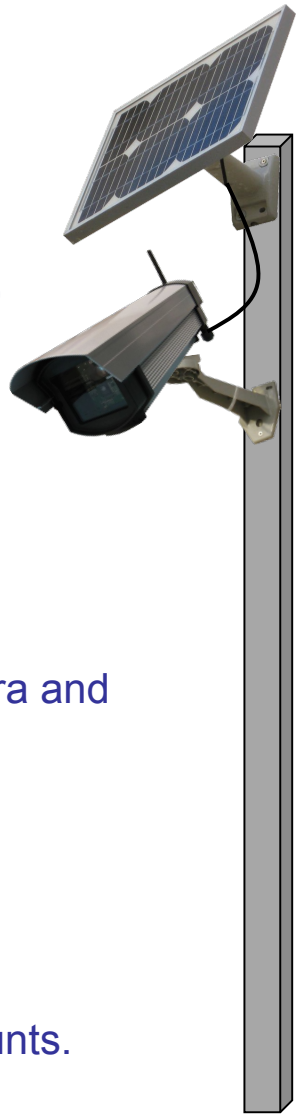
Summary

- A level crossing could be monitored with a minimum of 4 cameras but 6 would be recommended.
- Underground cabling costs can be reduced considerably by using wireless sensors.
- All or some of the cameras could have a GPRS modem ie
  - The wide angle camera could run in time lapse mode during the ‘flashing light’ sequence storing images to the SD card, but independently send an image four times a day to the monitoring station.
  - The ‘Red light’ cameras could send 5 images to the monitoring station every time a vehicle ‘runs’ a red light. The vehicle registration can be sent immediately to the Police.
  - All modem cameras can be controlled by SMS from the control room at any time
- The installation can be solar powered to save energy.
- The cameras require virtually no maintenance as the oldest images are overwritten when the SD card is full, typically providing 65 days of image history at any time.
- Even if the Installation is mains powered, the cameras and modems will still independently operate for many weeks if there is a power failure.

Digilant

Solar-Cam™

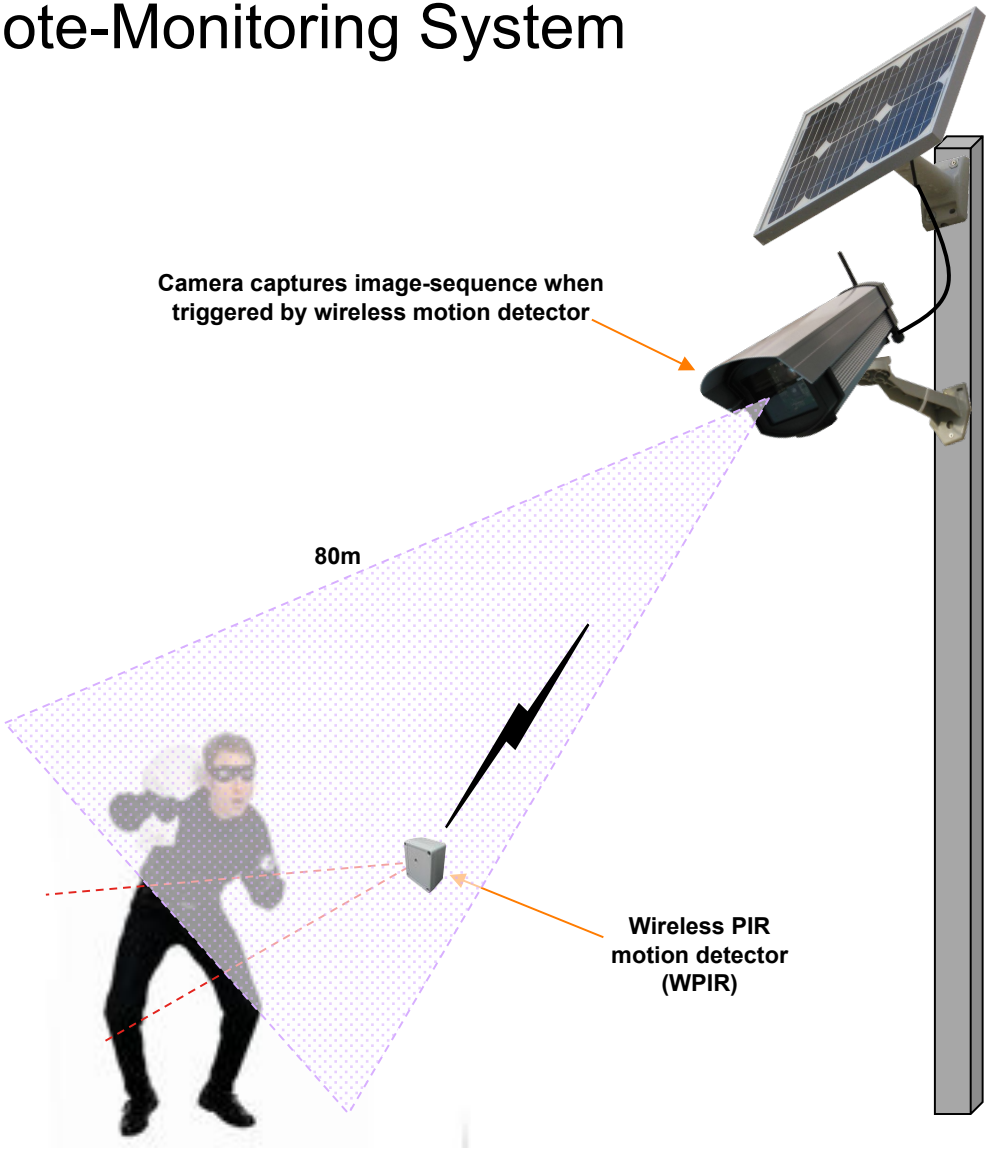
WIRE FREE



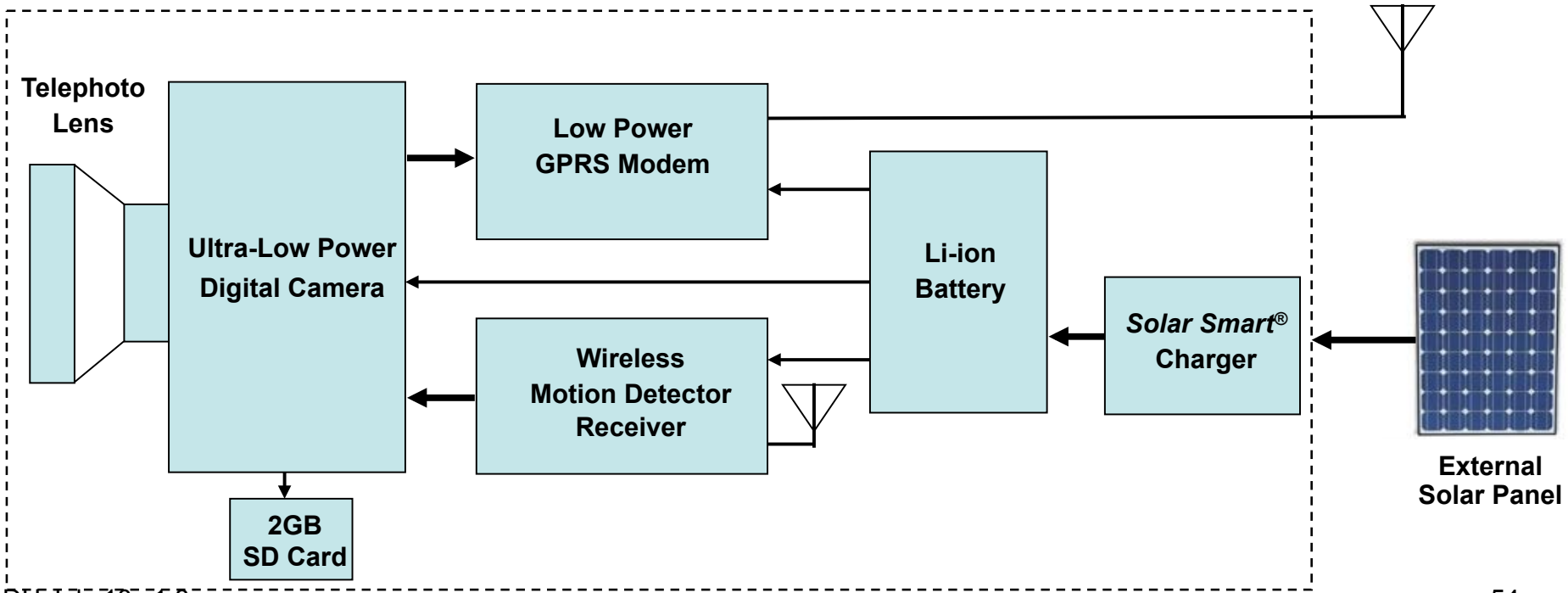
- Fully Solar powered wireless digital surveillance camera
- Complete ‘wire free’ solution for remote monitoring & surveillance.
- Operates for up to **11 weeks** in cloudy conditions (Sending 100 images/day!)
- Fully integrated **wireless activated** digital camera with GPRS modem.
- Images are sent immediately to mobile phone, PC, or Monitoring Station
- Full control and configuration of the camera via SMS commands
- Battery operated wireless motion detector works up to 80m away from camera and operates for 27 weeks (200 triggers/day) before recharging is required.
- Choice of 3 telephoto lenses to identify faces or registration plates
- All images are concurrently stored on an internal removable 2GB SD card
- Weatherproof housing with sun shield, Solar Panel, both with adjustable mounts.

Solar-Cam™
Remote-Monitoring System

Wireless PIR
(29 week standby)



Solar-Cam™
Wireless Remote-Monitoring Camera



Traffic-Cam™

WIRELESS TO WEB™ DASHBOARD

The ‘Wireless To Web’ (WTW) proprietary network is a fast, secure and reliable means of sending images from wireless cameras to the end user’s PC, mobile phone, monitoring station, or Dashboard.

The WTW Dashboard enables images to be displayed in real time from multiple cameras on a reference map.

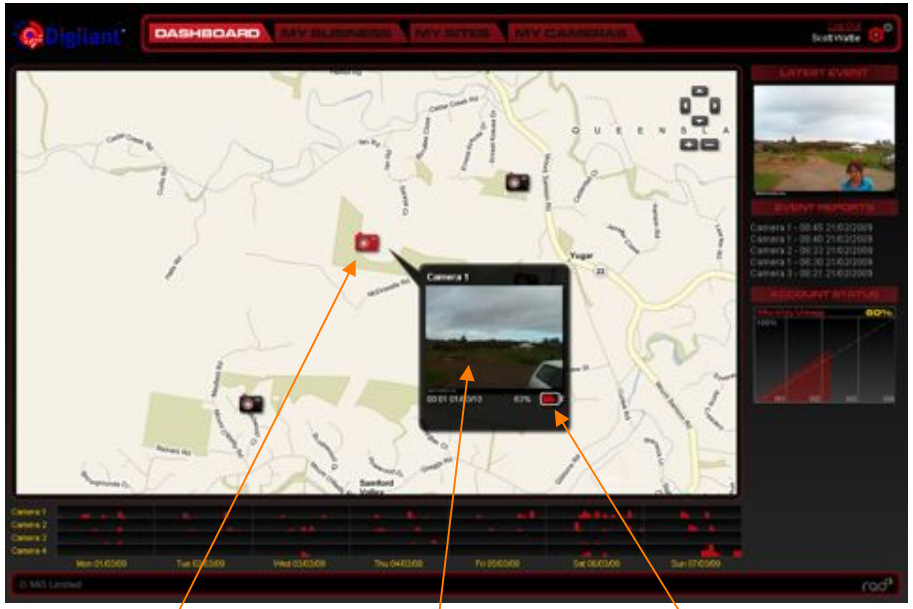
Login Screen

Camera Icons

Dashboard

WIRELESS TO WEB™ DASHBOARD

The coordinates of the camera are entered initially, and the WTW server automatically displays the relevant map as a background.
Each camera can be highlighted using the mouse and when selected, opens an image viewer to display real time or historical images in rapid succession. ie WTW dashboard



Highlighted Camera

Thumbnail showing most recent image

Battery voltage

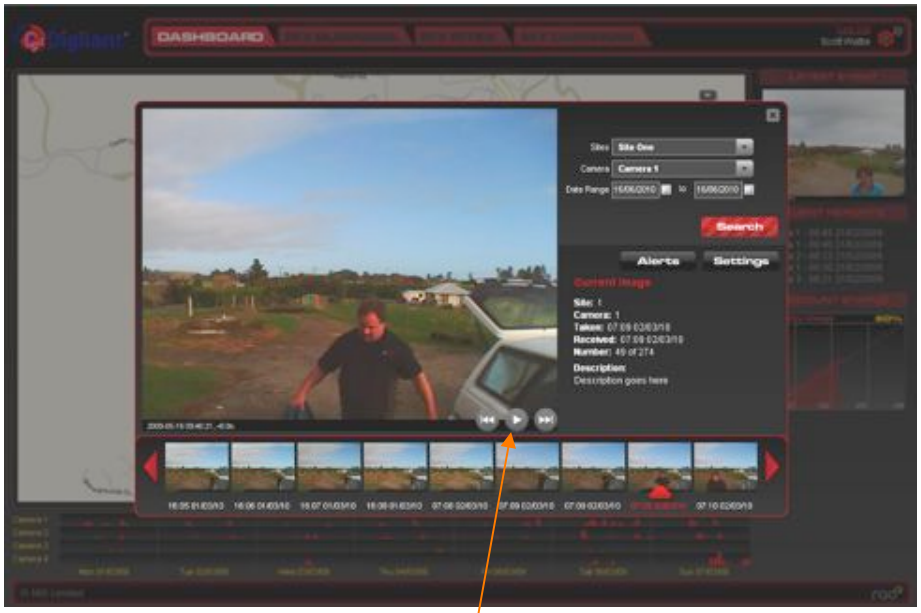
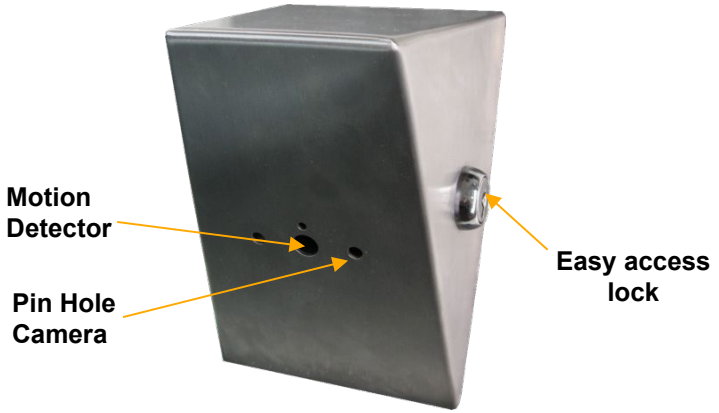


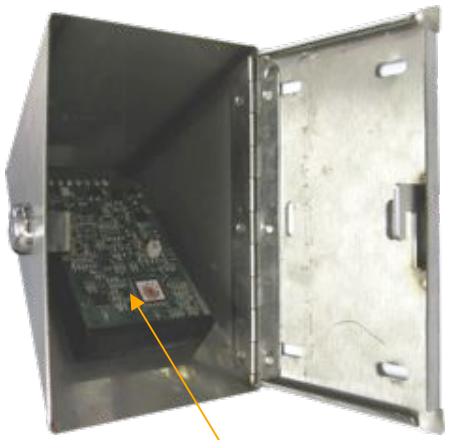
Image Viewer

Secure Housing

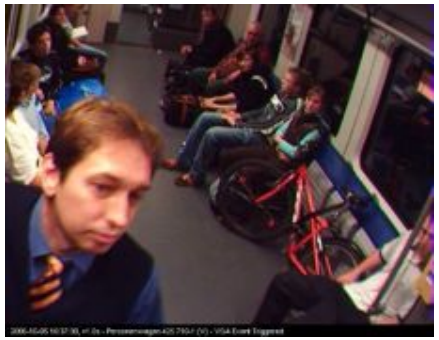
- **Rugged Vandal proof Stainless Steel case**
- **Prevents unauthorised access to the memory card.**
- **For use in public areas which may be prone to vandalism.**
- **Easy access lock to change SD card or battery**
- **The case can incorporate any one of the range of re-chargeable batteries allowing up to 9 months standby**
- **Can easily be made water resistant if required.**
- **Available in 30° or 45° Camera angles.**



Rugged Stainless Steel Housing



Train-Cam

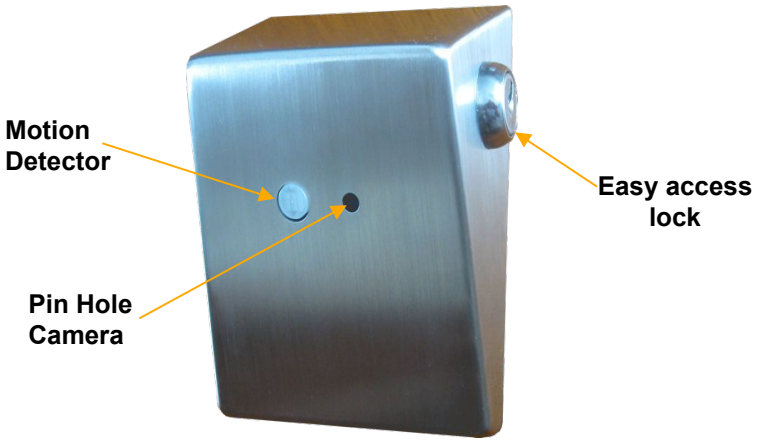


Colour or B&W Camera

- Ideal for Buses and trains
- Portable/relocate-able
- Patented ultra low power technology
- NO WIRES!! - Up to 5 month battery standby
- Motion activated or time-lapse mode
- Sophisticated scheduler
- Supports up to 32GB memory cards
- Stores up to 210,000 VGA colour photos
- External power source – 9 - 30VDC power supply

Bus-Cam System

- 5 compact digital surveillance Cameras, each with inbuilt DVR's to monitor all internal Bus activity
- Camera cost is a fraction of CCTV and by using existing power/light wiring, the installation is fast and does not keep the Bus off the road for very long
- Rugged 'vibration immune' CMOS Cameras with no moving parts
- Records all activity within a Bus - 24/7!
- Set & forget operation with up to 6 weeks of stored history in each camera at any time capturing 5K images/day
- Privacy is ensured as all images can be encrypted and stay within the camera's non-volatile memory until overwritten.
- Optional inbuilt GSM/GPRS modem for remote image monitoring in duress situation
- Ultra-Low Power consumption enables inbuilt backup battery to power cameras during the depot lay-over.
- Wide angle lenses used to cover entire width of Bus
- Pin-hole camera contains 4 glass lenses with SLR quality resolution
- Motion activated or time lapse mode



Secure-Cam

Secure-Cam

Rear Cabin mounted Camera

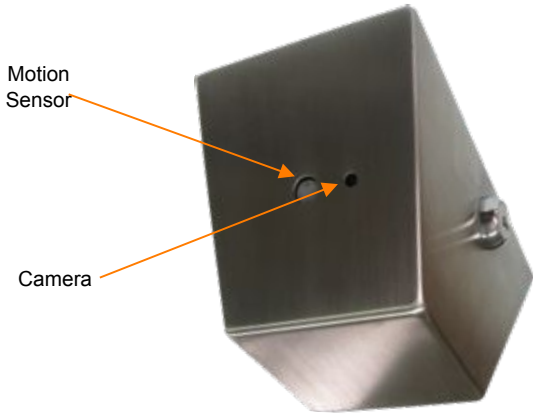
Front Cabin mounted Camera

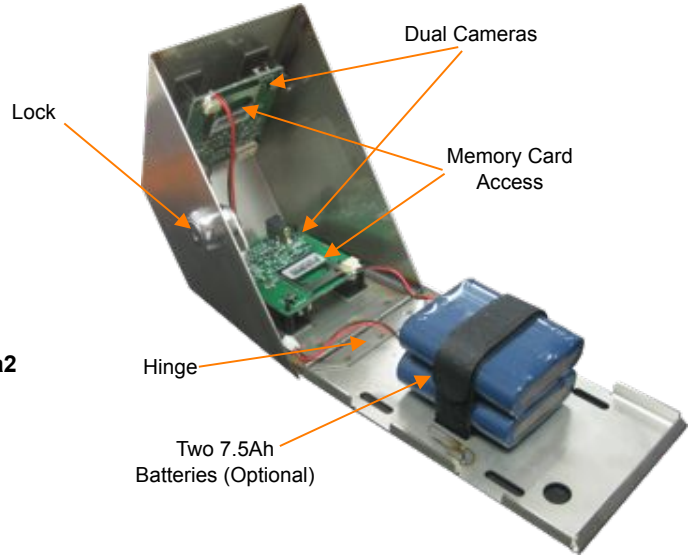
Secure-Cam

- Unique **"Ultra Low Power"** Digital surveillance camera in lockable stainless steel housing for wall mounting.
- **'Set and forget'** operation
- Stores up to **65 K images** (2GB SD card), **210 K images** (8GB SD card) before overwriting
- Colour or B&W cameras can be mounted front, rear, and at each door of the Bus for a fraction of the cost of CCTV
- Distributed storage ensures image survival after an accident or fire
- Rugged stainless steel case to prevent vandalism
- Customised image-capture sequence and image encryption
- Time and date stamped images with programmable text overlay
- Flexible scheduler for independent arming and disarming of camera
- Ideal for monitoring vandalism, graffiti or criminal activity in Buses
- Digital signature including camera ID, within each image for use in legal proceedings

Secure Dual-Cam

- **Ceiling Mounted Dual-Camera Station for Buses & Trains**
- **Dual independent cameras in one housing**
- **Lockable stainless steel case**
- **Set and forget operation**
- **Standalone operation from two 7.5Ah batteries each with 5 ½ months standby**
- **Can also be powered from Bus supply (24VDC)**
- **High sensitivity colour image sensor for low light operation**
- **Optional Black & White image sensor for very low light applications**
- **Ideal for monitoring Buses, Trains, and Hallways.**

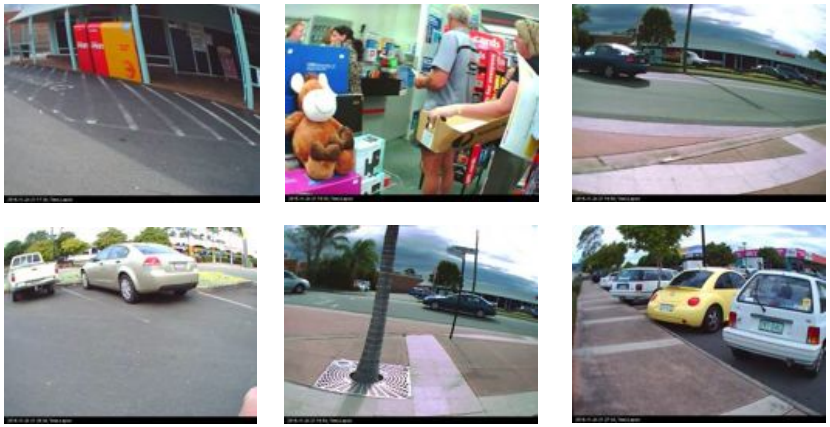




Digilant

Patrol-Cam

Patrol-Cam can be discreetly mounted on the Officer's uniform



- Unique "wire-free" mobile digital surveillance camera
- Matchbox sized - 77 x 65 x 17 mm (3" x 2.6" x 0.6")
- Operates for up to 9 hours (1 shift) on its small internal battery
- Captures up to one image every 2 seconds (Time Lapse)
- Compact, lightweight and truly wearable
- 124g incl. battery and Krusell case
- Complete automatic operation and requires no user intervention
- Stores up to 65,000 images
- High resolution colour or B&W JPEG images
- Image encryption to ensure privacy.
- Time and date stamped images with programmable text overlay.
- Digital signature including camera ID, within each image for integrity verification.

Applications-

Vending machine Cam

- The Camera in a flush mounting kit is located on the inside of the machine.
- The camera is vibration/tilt activated or triggered from the coin mechanism.
- One or two small holes drilled in the front of the machine are barely noticeable.

ATM Cam

- The Camera in a flush mounting kit is located on the inside of the ATM.
- The camera is vibration/tilt activated or triggered from the ATM card reader.
- One or two small holes drilled in the front of the ATM are barely noticeable.

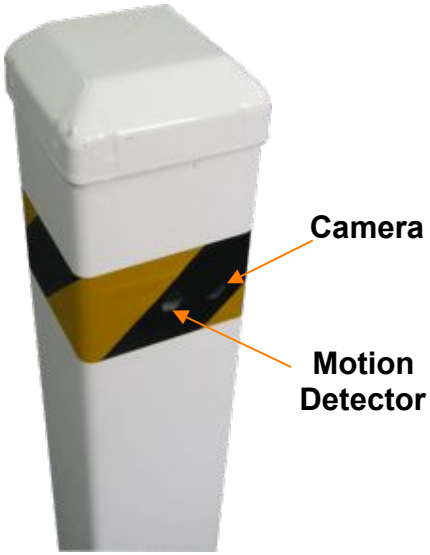
Arch Lever Folder Cam

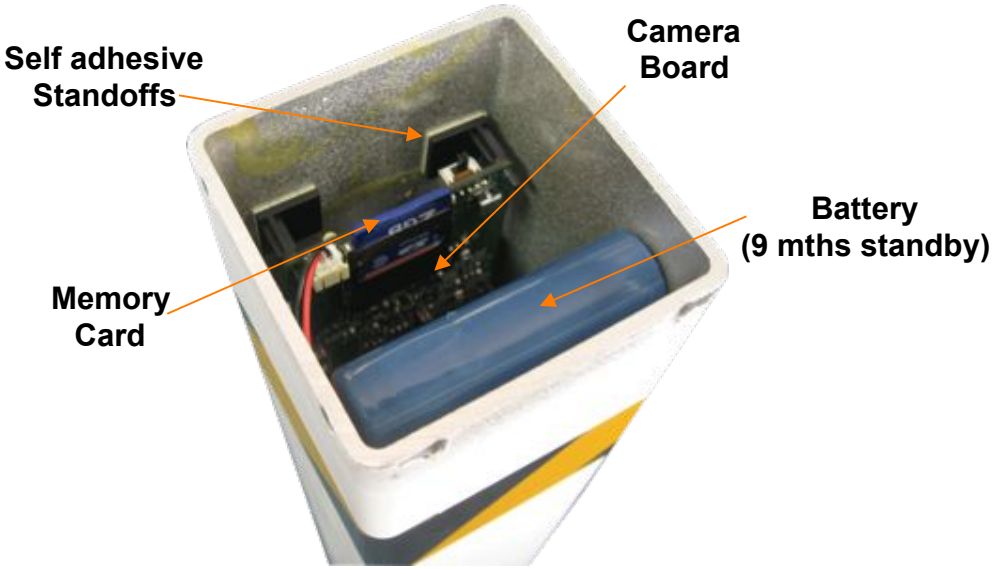
- The Camera in a flush mounting kit is located on the inside spine of the folder.
- Two small holes drilled in the front of the folder are barely noticeable.

Bollard Cam

- The Camera in a flush mounting kit is located inside the bollard.
- A locked rear door allows access to Camera.
- Two small holes drilled in the front of the bollard are barely noticeable.

Bollard-Cam





- **Bollard-Cam is a compact 'wire free' surveillance camera with inbuilt DVR mounted in a Bollard**
- **Rugged and secure means of mounting surveillance cameras to monitor pedestrians and vehicles**
- **Ideal height to capture registration plates and vehicle drivers**
- **Easy access to retrieve SD card and battery**
- **Optional WiFi or GPRS modem to transmit images**

Bollard-Cam Housings

Aluminium Bollard

Plastic ‘white post’

Electrical Distribution box

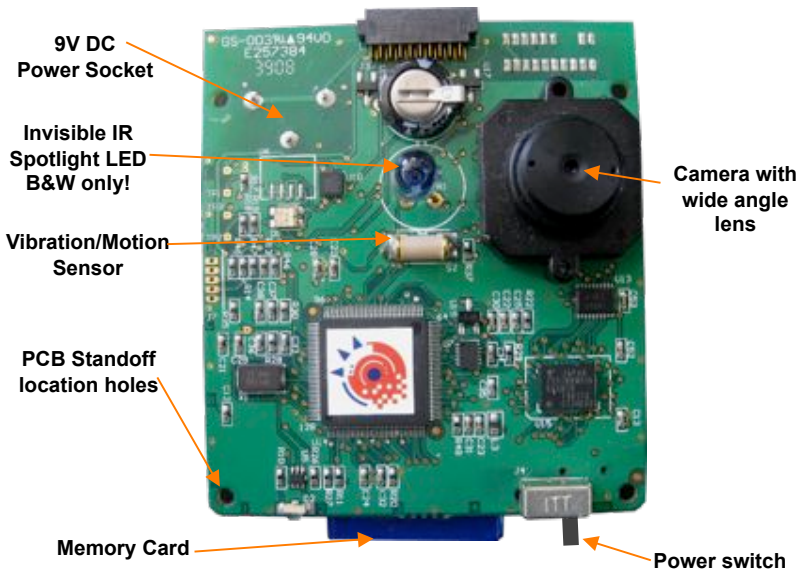
Lockable Steel Bollard

- The plastic ‘white post’ can be used for temporary surveillance beside roads and driveways. Numerous posts can be positioned on either side of the road but only one or two need to have cameras.
- Plastic bollards are also used for GPRS and WiFi cameras.
- The Electrical box can be used to monitor graffiti near roads
- A removable key lock section is also available on most bollards to access camera

Applications-
Farm Gate Monitoring

- **Solar powered Digilant camera mounted in covert weather proof case on farm gate post.**
- **Motion activated**
- **4 image sequence, 0.5 sec apart**
- **Camera activated 12m away**
- **Vehicle traveling at ~ 25 Km/h (15 mph)**
- **Registration No. is readable at first photo sequence**

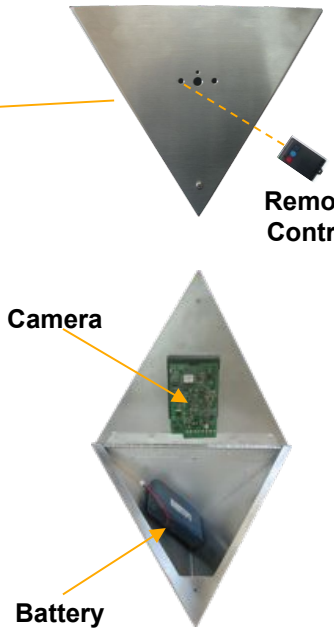
Vendi-Cam™



- The Digilant Vendi-Cam is designed to protect vending machines, kiosks, ticketing machines and ATM's from vandalism.
- The Camera can be easily mounted anywhere behind the machine's front panel and only requires one small hole for the pin hole lens.
- It has an inbuilt Omni directional tilt & vibration sensor which triggers the camera.
- The tilt module replaces the motion sensor which enables the sensitivity to be similarly adjusted in software.
- Pre-Trigger feature records images before the camera hole is blocked!
- Easy installation – only small hole to be drilled in the front of the machine.
- Optional Monochrome image sensor and Integrated Infra-red illuminator for low light conditions.

Elevator-Cam™

Stainless Steel Camera housing
(Corner mounted)



- Unique **"wire-free"** surveillance camera
- Operates independently for up to **9 months** on its internal battery or can be continually powered from elevator (9 - 30VDC)
- **'Set and forget'** operation
- Remote Control
- Colour or B&W camera mounted in top corner of elevator
- Motion activated or Time lapse mode
- **6 weeks history** stored on Memory card (8GB) at any time (5K images/day - 210,000 images total)
- Rugged stainless steel case to prevent vandalism
- Customised image-capture sequence and image encryption
- Time and date stamped images with programmable text overlay
- Flexible scheduler for independent arming and disarming of camera
- Ideal for monitoring vandalism, graffiti or criminal activity in Elevators
- Digital signature including camera ID, within each image for use in legal proceedings

Applications-
ATM Lobby & Bunker Surveillance

Full ATM surveillance requires 3 vantage points

1. **Customer viewed using machine in Lobby**
2. **Customer using machine from within the machine**
3. **Security guard activity behind the machine while replenishing cash**

ATM Lobby

ATM Bunker

Applications-
Covert

Air Freshener Disguise

- The Camera indoor case can be easily disguised as an air freshener dispenser.
- It can be mounted at head height to capture perfect front on images of intruders.

Pump Switch-Box Disguise

- The Camera weatherproof case can be disguised as a pump switch-box.
- The two holes in the case appear to be the on/off switch points
- A conduit can also be connected to the case, giving the impression that it is externally wired.

Letter Box Disguise

- The Camera can be mounted in a letter box using the flush mounting kit.
- The two holes for the motion sensor and camera can be disguised by the pattern label adhered to the side of the letter box.

Artwork Disguise

- The Camera can be mounted behind a painting.
- The special frame allows the painting to stand off from the wall by 25mm, allowing room for the camera.
- The two holes for the motion sensor and camera can be disguised by the artwork in the painting.

How does Intruder Cam compare with existing single camera CCTV Systems?

Intruder Standalone Camera	*Video Surveillance Camera with DVR*
– High resolution digital still image (640x480 pixels)	– *Reduced quality 'still image' due to decompression from video stream*
– Light, compact and portable	– *Bulky and non portable.*
– Optional long life battery powers unit for up to 9 weeks	– *Difficult to operate on batteries as a standalone unit*
– Inbuilt motion detector or external trigger inputs from cash register, door etc.	– *Video frame comparison for motion detection requires a lot of power!*
– 2 weeks battery backup	– *1 ½ hours battery backup with UPS*
– No installation or wiring costs	– *Expensive wiring and installation cost.*
– Photos can be viewed and analyzed using a PC or PDA with the High speed viewer	– *External monitor or TV required to view video.*
– Retail price is approximately 1/3 of CCTV	– *CCTV camera, DVR and cabling is quite expensive!*

Competition Analysis

Digital Surveillance Camera with inbuilt DVR

Digital Surveillance Camera with DVR	≥VGA Resolution	Removeable Memory	Internal Battery Life	Scheduler	Backup Battery	Alarm Interface	User Text in Image	PDA Software	Pretrigger Mode	Image Viewer	Remote Control	Digital Signature	Wholesale Price Ratio
MemoCam	√	√	-	√	X	√	√	√	√	√	√	√	1.5D
Home Guard/EZ-EYE	√	X	9 hrs	X	X	X	X	X	X	X	X	X	D
SuperSleuth	X	X	-	X	X	X	X	X	X	X	X	X	1.3D
Swann Private Eye*	√	√	7 hrs	X	X	X	X	X	X	X	X	X	0.3D
ePic Professional	√	X	-	√	X	√	X	X	X	X	X	X	0.12D/mth
DIGILANT®	√	√	**9 weeks**	√	√	√	√	√	√	√	√	√	D

*** The Swann Private Eye cannot put a time & date stamp on images and only captures in limited time-lapse mode.**

Camera Specifications

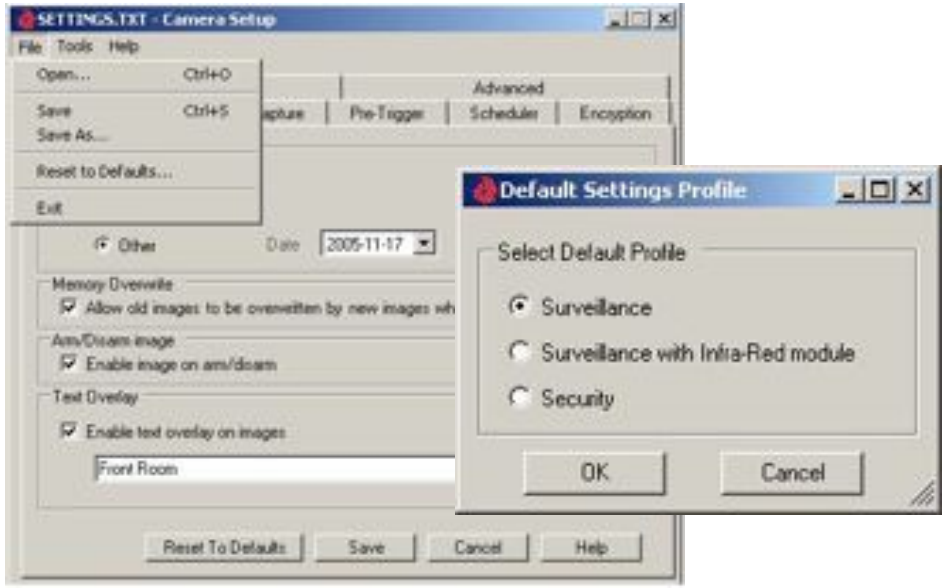
	Image Type	24bit Color or B&W VGA (640x480pixels), QVGA (320x240) JPEG compressed
	Camera Lens	**Standard:** 3.7mm, 54° horizontal, 39° vertical
	Image Sensor Sensitivity	**Colour:** 3.8 V/Lux-sec **Black & White:** 4.9 V/Lux-sec
	Motion Sensor	Type: PIR Range: 0-5 m (16.4') (Minimum), 0-12 m (39.4') (Typical) Field Of View: 100˚ horizontal, 82˚ vertical
	Memory Card	MMC™ Card (V4.2) or SD™ Card(v1.1), **FAT16** file format
	Storage Capacity	**2GB Memory Card:** VGA: 32,000 images, QVGA: 65,000 images
	External Power Supply	9VDC to 13.8V DC, 250 mA (Plug tip polarity + or -)
	Internal Battery Capacity	**Backup:** Lithium Ion, 3.7V 600 mAh **High Capacity:** Lithium Ion, 3.7V 3000mAh
	Photo-Relay Specifications	280VDC, 100mA
	Power Consumption	Standby: 1.9mA, (Xtern: 4mA) Running: 95mA , Charging: 200mA
	Case Dimensions	116 x 67 x 55 mm (4.6" x 2.6" x 2.2")
	Weight	125g (4.4 oz) (with backup battery), 163g (5.8 oz) (Including packaging)
	Operating Temperature	-20°C to +60°C (-4°F to 140°F)
	PC Software Requirements	Windows 2000 (SP4), Windows XP (SP2), Windows Vista

Software

Startup

- **The Camera setup software enables the user to configure the Camera with 26 different options.**
- **The image viewer with variable speed movie feature allows users to quickly find the images of interest.**
- **Decryption of images.**
- **View the detailed Camera event log.**

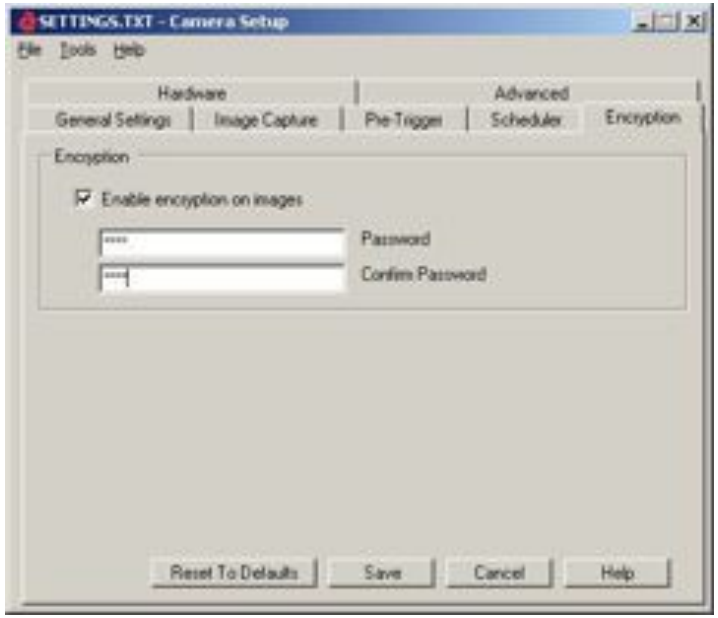
Reset to Defaults



- **Simply select the Camera application and the default settings will be automatically updated for download to the Camera.**

Software

Encryption



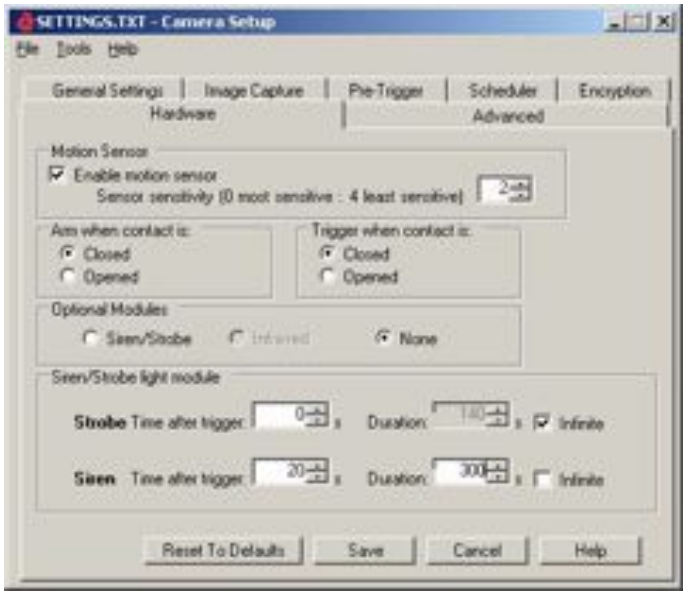
- **This option enables the user to secure the photos stored on the memory card to prevent anyone else from viewing them.**
- **The encryption process requires the user to enter a password which is used as part of the key and the files are given a ".ENC extension"**

Decryption

- **Once the photos have been copied to a computer, the user can select the source directory where the photos are, then select a destination directory for the decrypted files.**
- **After entering the correct password, the files are decrypted at the touch of a button.**

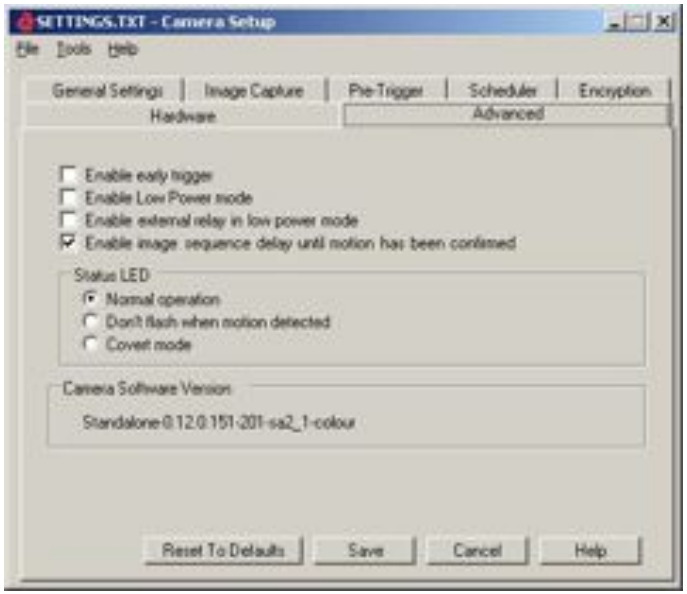
Software

Hardware



- **Disable motion/tilt sensor if triggered from an external source.**
- **Set motion/tilt sensitivity in 5 steps.**
- **Define ARM input and external trigger input polarity.**
- **Select either siren/strobe, IR modules (Xtern-Cam), or none.**
- **If the Camera is part of a Siren/Strobe alarm unit, these settings will define the time after trigger and the duration of both the Siren and Strobe light.**

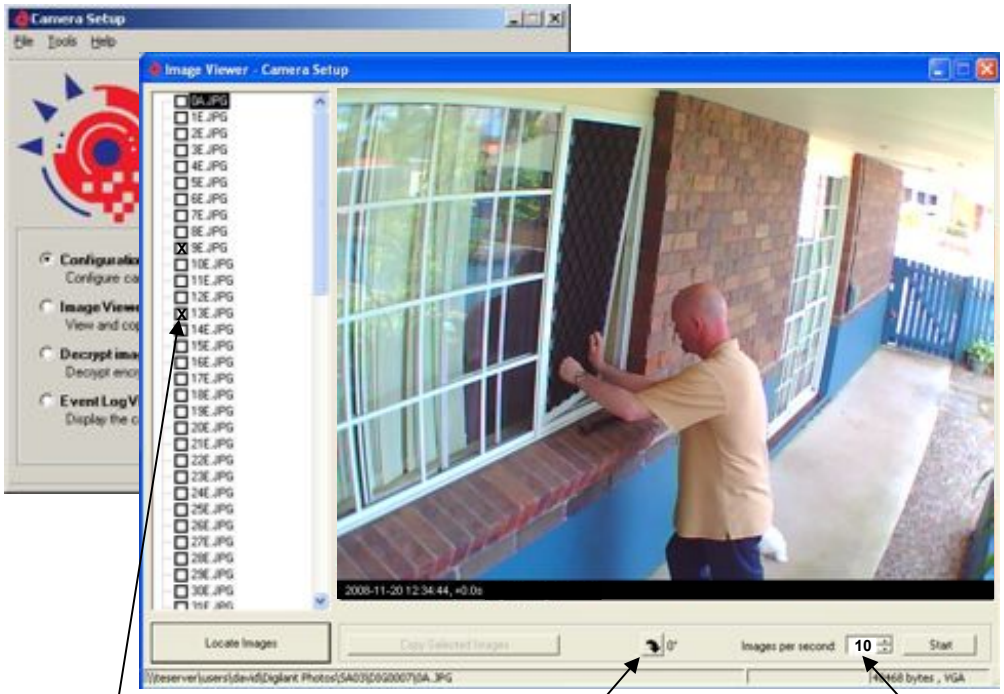
Advanced



- **Enable early trigger will allow the camera to continue to take photos before the first photo has been compressed and stored.**
- **Enable low power mode when connected to an external battery via the terminal block.**
- **Enable on-board relay to operate when in low power mode.**
- **Delay image sequence until motion has been confirmed.**
- **Status LED can be partially enabled or completely shut down.**

Software

Image Viewer



- In most surveillance applications, the memory card can store up to 65,000 images!
- The image viewer enables the user to quickly view a large number of images by either the up/down arrow cursor keys or the variable rate movie feature.
- When the images of interest have been located, they can be selected via a check box and then after all images have been viewed, they can be copied to a directory of choice. This means the card only needs to be scanned once!

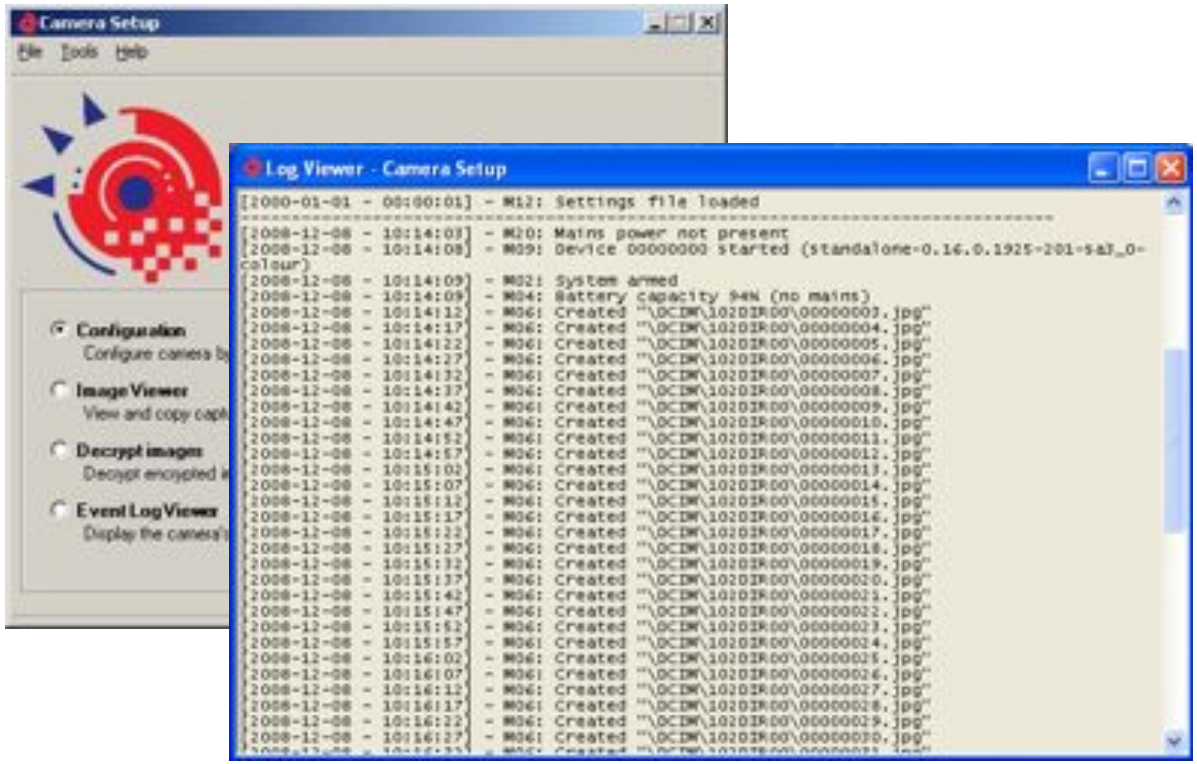
Selected images to be copied

Rotate images
(When Camera is mounted upside down)

Movie tab
ie 10 frames/sec

Software

Event Log Viewer



- The Camera creates a log which records every event that occurs while the camera is in operation.
- Each event is time and date stamped and includes a detailed description.
- The viewer enables the user to quickly scan the contents and confirm exactly what has occurred.
- The available battery capacity is displayed as a percentage.