

DUVAL SECURITY LIMITED

THE DUVAL EYE SYSTEM

**RAPID DEPLOYMENT REMOTE WIRELESS FREE CAMERA
REMOTE MONITORING AND ALARM RESPONSE FACILITY**



**CHURCHES HISTORIC
BUILDINGS AND
PLACES OF INTEREST**

**CONSTRUCTION
SITES PLANT AND
MACHINERY**



**RAILWAY SIDINGS
TRANSFORMERS AND
GENERATORS**



**MARINAS PORTS AND
BOAT YARDS**



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The RD3 GSM-Remote camera is a GSM/GPRS colour camera that can be located anywhere in the World with GSM coverage to deliver full colour VGA JPEG images on request or on activation of external events.

The pictures can be requested manually by dial up from a PC using a standard modem or by sending a command to the camera to take a picture by SMS or e mail.

The camera also has a caller id so it can be programmed to recognise the caller and automatically send an image by FTP, Email, HTTP and Post to a web server or to a custom server.

Equipped with extensive I/O capability the camera will also allow remote reading of external sensors.

It takes pictures on detection of sensor change and is programmed to respond automatically by activation of one or more of its outputs to provide an immediate time critical response whilst also informing the programmable recipients of the nature of the event.

These sensor events can be reported by SMS or Email to a central server or by voice messages to a standard telephone. The pictures can be sent by e mail as an attachment, direct to a web server using FTP or HTTP POST or to a central server.

The remote camera is typically powered from a mains adaptor or a 12V battery however; it also has its own optional back-up battery that allows the camera to keep operating for up to two days in the event of a mains failure. It also monitors its main power supply and alerts the owner when the battery is failing thus giving plenty of time to replace it.

The remote camera is typically powered from a mains adaptor or a 12V battery however; it also has its own optional back-up battery that allows the camera to keep operating for up to two days in the event of a mains failure. It also monitors its main power supply and alerts the owner when the battery is failing thus giving plenty of time to replace it. One of the unique benefits of the camera is its low power usage. Less than 0.6W of power consumption it can be operated from a 12 Volt lead acid battery and trickle charged by the use of a solar panel for year round un-interrupted service.

The camera also monitors the external power and provides an early warning of low power conditions via SMS or Email allowing service personnel sufficient time to provide on-site maintenance if required.

This is ideal for building sites where power is scarce or for rural areas that have no mains electricity at all.



10W Solar Panel

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FEATURES & SPECIFICATION RAPID DEPLOYMENT WIRELESS CAMERA

FEATURES

Weather, Vandal and Tamper resistant. Wall and ceiling mountings. Clear Lexam bubble.

9VDC – 35VDC power inputs. Flush insulated camera mounting or custom mount to suit individual installations.

Camera Mount.

Bubble Dome – Vandalism resistant

Heater

Protection rating

Cable entry

Housing Material

Colour

Parts supplied

Dimensions approx: (H x W x D)

Weight Kg

SPECIFICATIONS

Manual 2 axis adjustment. For easy indoor or outdoor installations.

4 Cable Entries Fully hidden cable routing
12V window heater
Protection index IP65/66

Turn & tilt mounting bracket.

Adjustment range 360° (H) 0° to 90° (V)

Vandal resistant 3mm clear polycarbonate bubble with inner lining

Integrated (Optional)

Protection index IP65/IP66

¾ and ½ inch tread for conduit glands.

Die-cast Aluminum

Standard Pantone Cool Gray 1C

½ inch gland blind covers

100mm x 120mm x 120mm

Approx: 1.2Kg

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- Low Power wireless rapid deployment camera using GSM mobile network
- Removable micro SD storage card capable of storing over 60,000 colour images

- Built-in 869 MHz wireless transceiver for wireless RF sensors
- Quad band 850/900/1800/1900 GSM
- Power consumption when idle less than 0.6W

- GPRS class 10
- RS485 for attaching extra cameras or connecting to data loggers
- On-board temperature monitoring

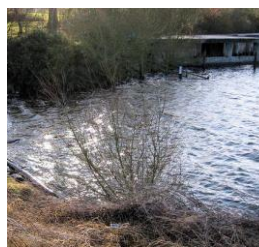
- Voice message download & audio playback (optional)
- 12V lead acid battery trickle charged by solar panels for year-round uninterrupted service (optional)

GPRS - GSM Rapid deployment Camera



GSM Camera Remote Camera over GSM

Cell Phone Camera JPEG Camera



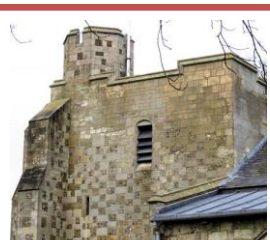
Data Loggers

Observation Camera



GSM Surveillance camera

M2M Connectivity



Instant Response

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Hardware Features

- Low power wireless rapid deployment camera using the GSM Mobile network
- Removable micro 1Gb SD storage card for up to 60,000 colour images
- Power input from 8V – 35V (12V Nominal)
- Power consumption when idle less than 0.6W
- 1 wired input from use of external PIR's etc
- Built-in 869MHz wireless transceiver for wireless RF sensors
- On-board temperature monitoring
- GSM audio expansion connection to microphone & speaker
- Bluetooth Class 1 2.1
- On-board colour camera
- Status LED's for system and GSM status voice message download & playback

Temperature

- -10°C to +50°C

Power

- 8-24V Nominal 12V
- 0.6W when idle
- 4W during voice or data call

GSM

- Quad band 850/900/1800/1900
- GPRS class 10
- Coding schemes CS1 to CS4
- Circuit switched data (CSD) asynchronous up to 14.4 kbps
- Automatic fax group 3 (class 1)
- Call forwarding
- Call barring
- Call waiting & Call hold
- Calling line identity
- Explicit call transfer

Interfaces

- 1 x input
- 1 x Open drain output
- 1 x RS484
- 1 x RF868MHz

Audio

- 1 x ADPCM voice output (optional)
- 1 x Microphone/earphone expansion

Camera Specification

- | | |
|-------------------------|-------------|
| • Imager | OV7640 |
| • Imager sensitivity | 1 Lux |
| • Array size | 640 x 480 |
| • Pixel size | 5.6 x 5.6µm |
| • Scanning | Progressive |
| • Image area | 3.6 x 2.7mm |
| • S/N ratio | 46dB |
| • Interface levels Vmax | 3.3V |
| • Operating voltage | 3.3VDC |
| • Operating current | 45mA |
| • Power down current | <1mA |

Camera lens

- | | |
|------------------------|--------------------------------|
| • Focal length | 3mm |
| • Back focal length | 5.5mm |
| • Angle of view (Diag) | 120° |
| • F No | 1.8 |
| • Iris | Fixed |
| • Lens construction | 4 element glass with IR filter |
- The lens can be easily changed to suit the application from narrow to wide angle and include low light to normal light.

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FEATURES & SPECIFICATION (ECO-CAM) WIRELESS CAMERA – SOLAR PANEL COMBINATION *Fig 01



- 10W Solar Panel
- RD3 Wireless Camera
- Battery combination

- Fittings 48/50mm pipes
- Multi turn combination
- PIR Receiver Interface

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Performance

Rated power (Pmax) 10W
Power tolerance $\pm 10\%$
Nominal voltage 12V
Limited Warranty 2 years

Configuration

Multi-mount frame with lo-pro J-Box and output cable
Clear universal frame and standard J-Box

Electrical Characteristics

Maximum power (Pmax) 3 10W
Voltage at Pmax (Vmp) 16.8V
Current at Pmax (Imp) 1.19A
Warranted minimum Pmax 18W
Short-circuit current (Isc) 1.29A
Open-circuit voltage (Voc) 21.0V
Temperature coefficient of Isc
(0.065 ± 0.015)%/°C
Temperature coefficient of Voc -
(80 ± 10)mV/°C
Temperature coefficient of power -
(0.5 ± 0.05)%/°C
NOCT (Air 20°C; Sun 0.8kW/m² ;
wind 1m/s)
47 \pm 2°C
Maximum series fuse rating 3A
Maximum system voltage 50V (US NEC
rating)
50V (IEC 61215 rating)

Mechanical Characteristics

Dimensions

Length: 421mm (16.6") Width: 501mm
(19.7") Depth: 23mm (0.9")

Weight 2.5 kg (5.5 pounds)

Solar Cells 36 cells (38mm x 114mm) in a
4x9 matrix connected in series

Junction Box box with 4-terminal
connection block; IP 65, accepts PG 13.5,

M20 ½ inch conduit or cable fittings
accepting 6-12mm diameter cable.

Terminals accept 2.5 to 10mm² (8 to 14
AWG) wire Output Cables

AWG# 18 (0.75mm²) 2 core ITC/PLTC;
length - 4572mm

Construction Front: High-transmission 3mm
(1/8th inch) tempered glass; Back:
Polyester Encapsulant: EVAFrame

Clear anodized aluminum alloy Multi-mount
frame; Colour: silver



Qualification Test Parameters

Temperature cycling range -40°C to +85°C
(-40°F to 185°F)

Humidity freeze, damp heat 85% RH
Static load front and back (e.g. wind) 2,400
pa (50psf)

Front loading (e.g. snow) 5,400 pa (113psf)
Hailstone impact 25mm Ø (1 inch) at 23
m/s (52mph)

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Quality and Safety

Manufactured in ISO 9001-certified factories; conforms to European Community Directives 89/33/EEC, 73/23/EEC, 93/68/EEC; certified to IEC 61215

Module power measurements calibrated to World Radiometric Reference through ESTI (European Solar Test Installation at Ispra, Italy)

Listed by Underwriter's Laboratories for electrical and fire safety (Class C fire rating)

Approved by Factory Mutual Research in NEC Class 1, Division 2, Groups C & D hazardous locations.

Qualification Test Parameters

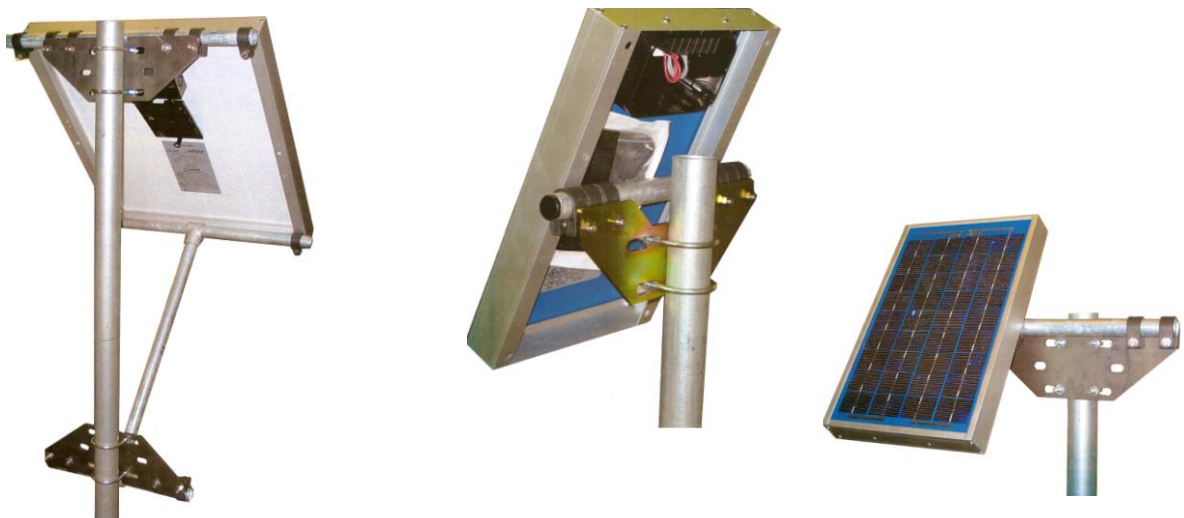
Temperature cycling range
-40°C to +85°C
(-40°F to 185°F)
Humidity freeze, damp heat 85% RH

Static load front and back (e.g. wind) 2,400 pa (50psf)

Front loading (e.g. snow) 5,400 pa (113psf)
Hailstone impact 25mm Ø (1 inch) at 23 m/s (52mph)

1. **Module Warranty:** 12-year limited warranty of 90% power output; 2-year limited warranty of materials and workmanship.
2. This data represent the performance of typical BP modules, and are based on measurements made in accordance with ASTM E1036 corrected to SRC (STC.)
3. During the stabilization process that occurs during the first few months of deployment, module power may decrease by approx. 1% from typical Pmax.

SOLAR PANEL SPECIFICATION AND MOUNTING OPTIONS



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PRICE LIST (RD3 – 006) GSM CAMERA ONLY (Excludes VAT & Delivery)

1 – 5 Unit Price

£584.16 GBP

6 – 10 Unit Price

£540.89 GBP

11 – 20 Unit Price

£519.26 GBP

21 – 50 Unit Price

£475.98 GBP

51 – 100 Unit Price

£432.71 GBP

PRICE LIST (GSM CAMERA & SOLAR COMBINATION) SET AS SHOWN IN *Fig 01 (Excludes VAT & Delivery)

CAMERA COMBO

£1298.00 GBP

Recommended spares pack

£296.80 GBP

Solar Panel 10W

Brackets & U Bolts

Battery 7.5Ah

Camera Bracket

PIR Receiver Box

Regulator

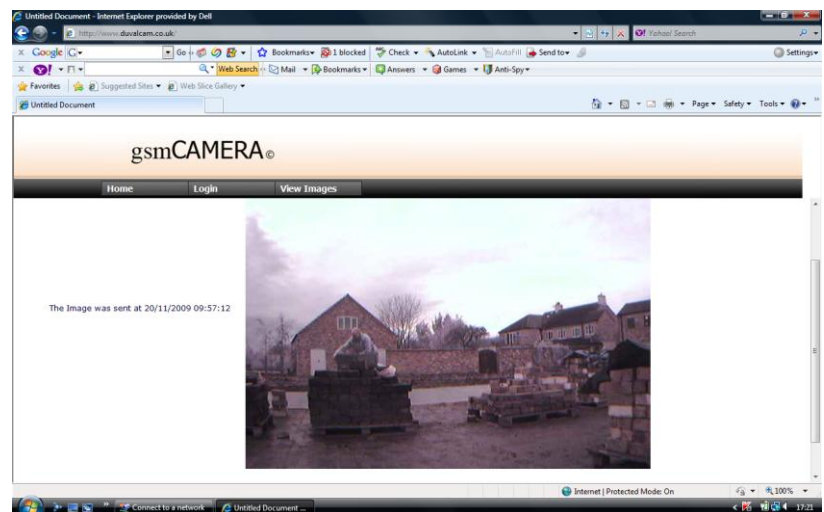
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**SAMPLE PICTURES TAKEN BY THE RD3 WIRELESS CAMERA
ACTIVATION AREA IS AT THE BOTTOM OF THE STAIRS**



**SAMPLE ALERT
PICTURE OF A
BUILDING SITE**

**THIS ALERT PICTURE
IS A HTTP "POST" TO
OUR WEBSITE
www.duvalsecurity.co.uk**

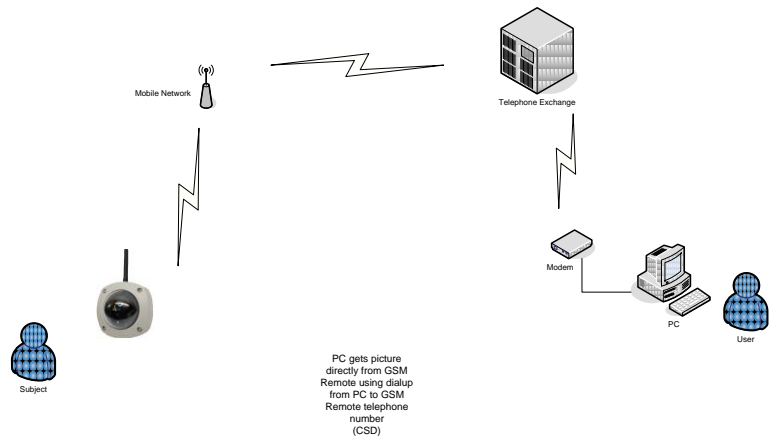


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Taking a Picture CSD (dialup via modem)

This is the most direct method but also the slowest and probably the most expensive. The advantage is that you can get a picture instantly direct from the GSM Remote camera

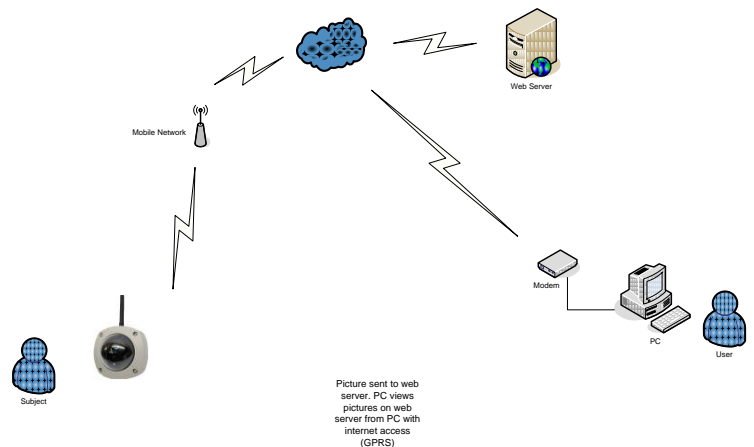


HTTP POST (via GPRS)

Posting a picture to a web server using GPRS

This method uses the GPRS network so it's faster than CSD and cheaper. The GSM Remote camera sends a picture to the web server using HTTP POST on any of the following events.

1. On activation of any of its inputs
2. On a regular timed basis e.g. every hour.
3. On voice call i.e. a call to the voice number of the GSM Remote unit will, if the calling number is recognised, send a picture.
4. On command by SMS or email.



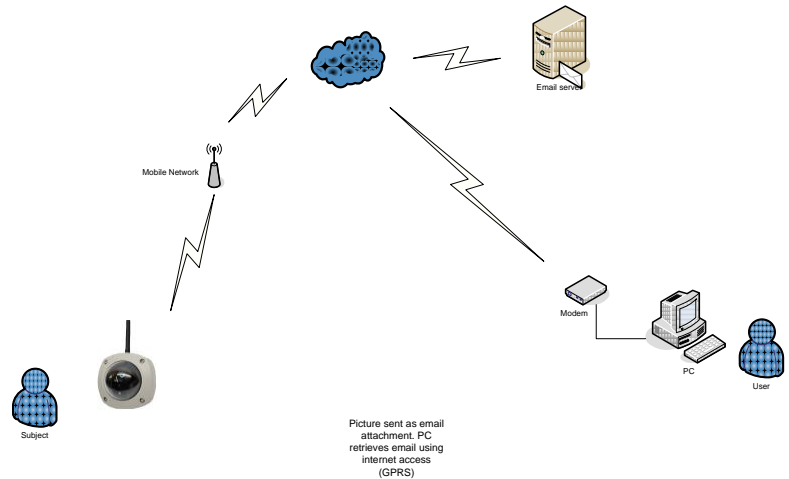
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EMAIL (via GPRS)

Emailing a picture using GPRS

This method uses the GPRS network so it's faster than CSD and cheaper. The GSM Remote camera sends a picture as an attachment in an email on any of the following events.

1. On activation of any of it's inputs
2. On voice call i.e. a call to the voice number of the GSM Remote unit will, if the calling number is recognised, send a picture.
3. On command by SMS or email.

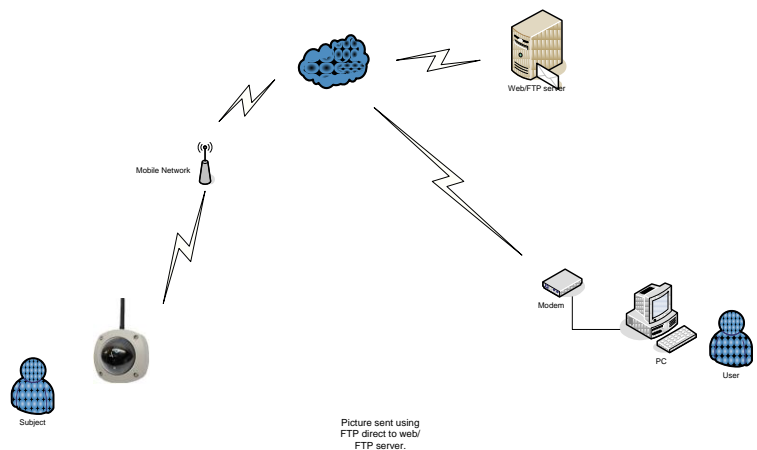


FTP (via GPRS)

FTP a picture to a web server using GPRS

This method uses the GPRS network so it's faster than CSD and cheaper. The GSM Remote camera sends a picture to the web server using FTP on any of the following events.

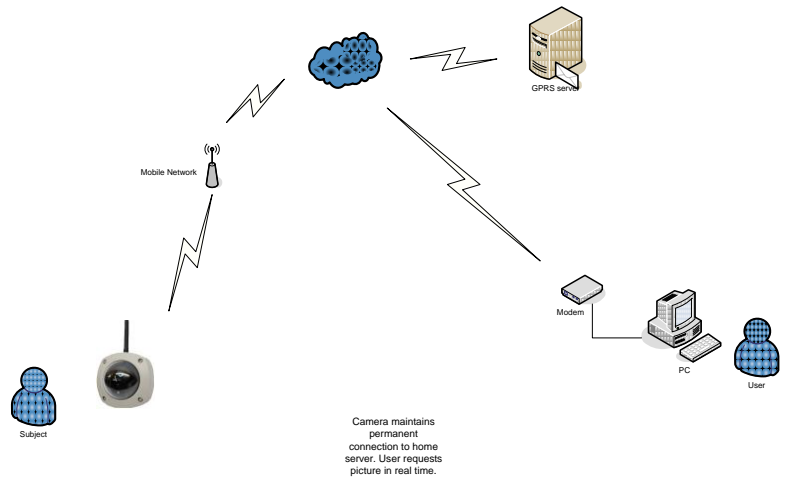
1. On activation of any of it's inputs
2. On a regular timed basis e.g. every hour.
3. On voice call i.e. a call to the voice number of the GSM Remote unit will, if the calling number is recognised, send a picture.
4. On command by SMS or email.



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Client/Server using GPRS

This method uses the GPRS network so it's faster than CSD and cheaper. The GSM Remote camera connects to a server on the internet and maintains an always on connection. The user connects to the server and requests picture in real-time from the server while the camera is connected.



Bluetooth Technology

Pictures can be taken and viewed with GSM software via [Bluetooth](#).

Remote arming & disarming of the camera via [Bluetooth](#).

Set-up installation and lens focusing including installation can be done from the safety of the ground using [Bluetooth](#).

Sending commands – posting images to a pre-defined server using [Bluetooth](#)

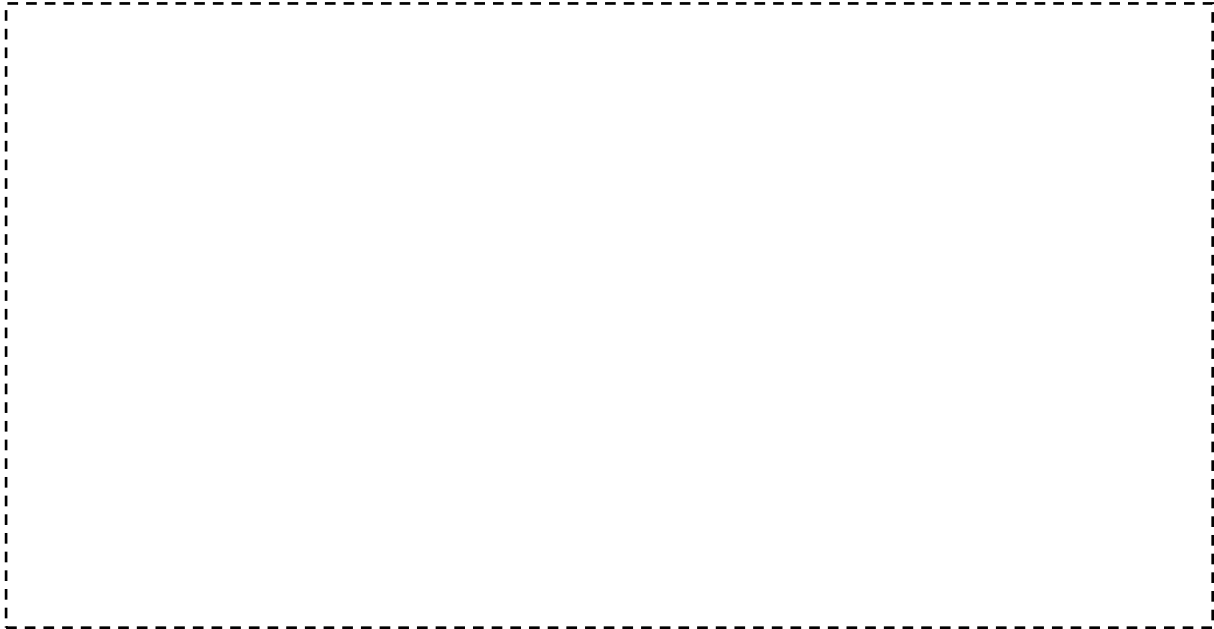
Retrieving images from the inbuilt 2Gb micro SD card via [Bluetooth](#).

De-bugging of the camera via [Bluetooth](#).



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NOTES:



December 2009