



Operating Manual

iCAM501



WWW.CABLEJOINTS.CO.UK
THORNE & DERRICK UK
TEL 0044 191 490 1547 FAX 0044 477 5371
TEL 0044 117 977 4647 FAX 0044 977 5582
WWW.THORNEANDDERRICK.CO.UK

This page is intentionally left blank.

Document Number **326264** (See Last Page for Revision Details)

©2009 Extronics Limited. This document is Copyright Extronics limited.
Extronics reserve the right to change this manual and its contents without notice, the latest version applies.

Contents

1	Safety Information and Notes	4
1.1	Storage of this Manual	4
1.2	List of Notes	4
2	User Guide	5
2.1	Changing/Installing Batteries	5
2.2	Powering on/Off	6
2.3	Installing the iCAM501 With an Operating System	6
2.3.1	Windows XP	7
2.3.2	Windows Vista / Windows 7	8
2.4	Setting Time and Date of the iCAM501	8
2.4.1	Setting Time and Date in Windows XP	8
2.4.2	Setting Time and Date in Windows Vista / Windows 7	10
2.5	Configuring How the Camera Behaves With Windows XP	10
2.6	Configuring How the Camera Behaves With Windows Vista/Windows 7	12
2.7	Camera Setup and Taking Pictures	12
2.7.1	Enabling The Flash	13
2.7.2	Enabling the Audio Recording Feature	14
2.8	Taking a Picture and making an Audio Recording	14
2.9	Downloading Pictures and Audio	16
2.9.1	Manually Downloading Pictures	16
2.9.2	Using Windows XP Microsoft Scanner and Camera Wizard	17
2.9.3	Using Windows XP Automatic Picture Download Feature	20
2.9.4	Using Windows Vista / Windows 7 Import Pictures and Videos Wizard	20
2.10	Upgrading Firmware	23
2.11	Error Codes	24
3	Structure and Function	25
3.1	Intended Purpose Usage	25
3.2	Transportation and Storage	25
3.3	Authorized Persons	25
3.4	Cleaning and Maintenance	25
3.5	Safety Precautions	25
3.6	Cleaning and Maintenance Intervals	26
3.7	Aggressive substances and environments	26
3.8	Exposure to external stresses	26
4	Technical Data	27
5	Certification	28
6	ATEX Certificate/IECEX Certificate	29
7	Manual Revision	35

1 Safety Information and Notes

1.1 Storage of this Manual

Keep this user manual safe and in the vicinity of the device. All persons required to work with the device should be advised on where this manual is stored.

1.2 List of Notes

The notes supplied in this chapter provide information on the following.

- **Danger! / Warning!**
 - Possible hazard to life or health.
- **Caution**
 - Possible damage to property.
- **Important**
 - Possible damage to enclosure, device or associated equipment.
- **Information**
 - Notes on the optimum use of the device

Warning!	ONLY Duracell Plus MN1500 or Duracell Procell MN1500 cells may be used with the iCAM501.
-----------------	---

Warning!	DO NOT take more than ONE spare pair of Duracell Plus MN1500 or Duracell Procell MN1500 cells into a hazardous area.
-----------------	---

Warning!	Any connection to the iCAM501 USB port must NOT be made in a hazardous area.
-----------------	---

Warning!	If the iCAM501 is dropped, it must be inspected for damage. If any cracks in the case are found which invalidate the IP rating, the iCAM501 must NOT be used in a hazardous area.
-----------------	--

Important	Any repairs or replacement of parts MUST be performed by the manufacturer or its nominated sub contractor or agent.
------------------	--

Important	The iCAM501 contains no user serviceable parts. The main part of the enclosure must not be opened under any circumstances.
------------------	---

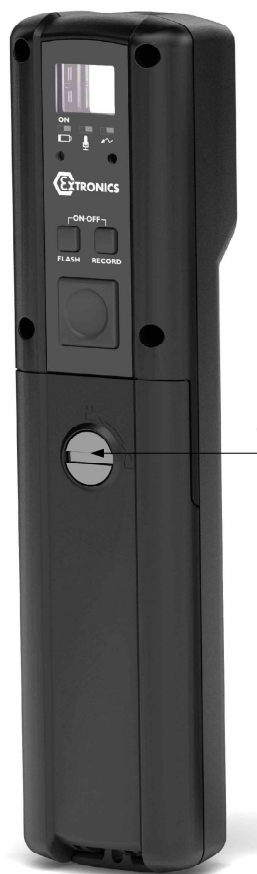
2 User Guide

2.1 Changing/Installing Batteries

To change or install the batteries in the iCAM501 turn the screw as indicated below to remove the cover

Warning! ONLY Duracell Plus MN1500 or Duracell Procell MN1500 cells may be used with the iCAM501.

Warning! DO NOT take more than ONE spare of Duracell Plus MN1500 or Duracell Procell MN1500 cells into a hazardous area.



Use a coin to turn the screw anti-clockwise, the lid should then pop up.

To close it again, turn the coin clockwise, the screw should click into place once correctly seated

Install the batteries in the correct orientation (indicated on the enclosure) and close the lid again.

2.2 Powering on/Off

Information The iCAM501 must be fully powered on before plugging a USB cable into the camera or to take a picture. This will be indicated when the green LED has stopped flashing.



Press and hold the “FLASH” and “RECORD” buttons simultaneously until the “ON” LED starts to flash green

Green LED will flash for ~10 seconds while the camera boots. The Blue and Red LED will flash briefly during boot up. The Green LED then go solid when ready for operation



The diagrams above show how to power on the iCAM501. The same procedure is required to turn the iCAM501 off. Once it is turned off no LEDs should be lit.

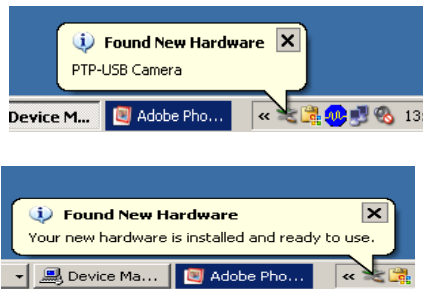
2.3 Installing the iCAM501 With an Operating System

This section will provide details on how to install the iCAM501 to be used with a supported host operating system. Although the iCAM501 supports Linux and Mac OSX 10.x this manual only focuses on Windows operating systems. The iCAM501 is PTP compliant so should work in the same way as many other digital cameras do with various operating systems

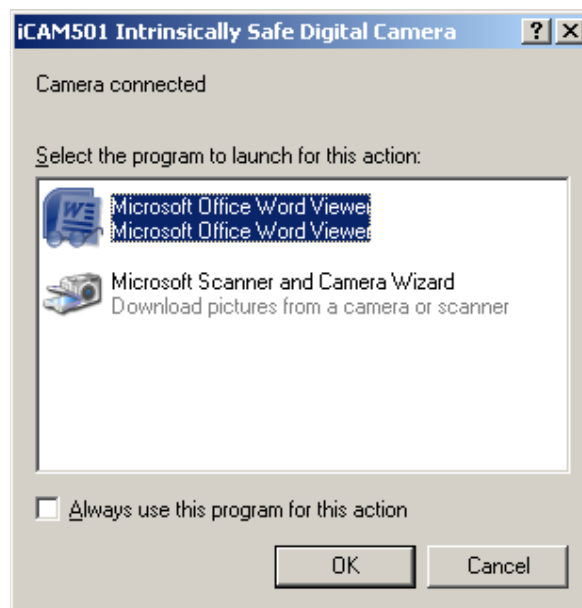
The iCAM501 must be powered on and the green status LED must be solid before connecting to a host operating system, otherwise the operating system will not establish communication with the camera. Once the green LED has become solid connect the iCAM501 via a USB cable to the host computer.

2.3.1 Windows XP

Once the iCAM501 has been connected to a machine running Windows XP, the drivers and software required to establish communication between them will automatically be installed. A “balloon” icon will show up in the taskbar stating that “Your new hardware is installed and ready to use”.



If the Windows Autorun feature is enabled (it is enabled by default) a window like the one below will be shown. By clicking on any of the listed programs and then clicking ok the files currently on the camera will be displayed in the chosen application. By clicking cancel nothing will open.



Information on customizing the way the iCAM501 interacts with Windows XP can be found in section 2.5

2.3.2 Windows Vista / Windows 7

Once the iCAM501 has been connected to a machine running Windows Vista or Windows 7, the drivers and software required to establish communication between them will automatically be installed. A “balloon” icon will show up like the one pictured below



If the Windows Autoplay feature is enabled (it is enabled by default) a window like the one below will be shown. By clicking on any of the listed options and then clicking ok the files currently on the camera will be displayed in the chosen application. By clicking the close button nothing will happen.



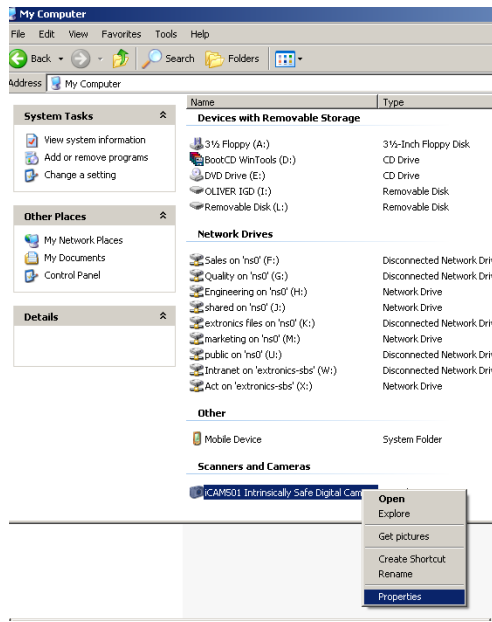
Information on customizing the way the iCAM501 interacts with Windows Vista/Windows 7 can be found in section 2.6

2.4 Setting Time and Date of the iCAM501

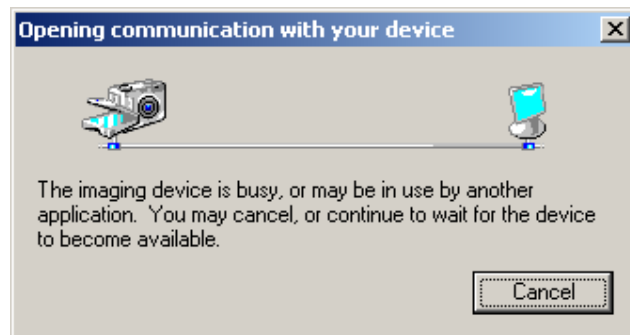
The iCAM501 has an internal clock which is used to time code the JPEG file with information on when a picture and audio file was taken. The internal clock will need to be set when the camera is first used or when the batteries have been flat for an extended period of time. If the time and date is not set the JPEG files will have an incorrect time code embedded into the file.

2.4.1 Setting Time and Date in Windows XP

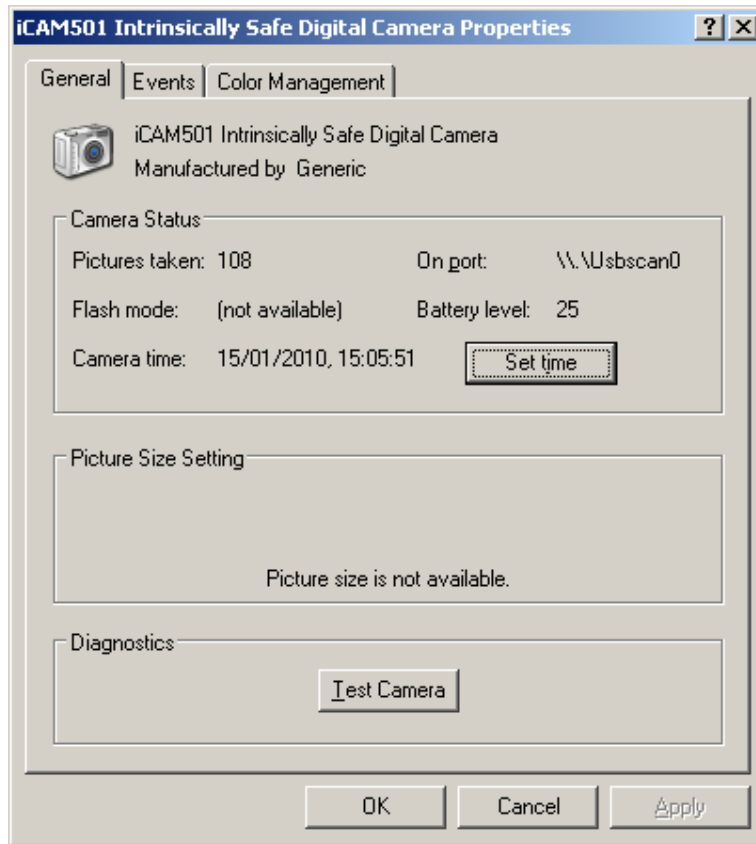
Attach the iCAM501 to the machine running Windows XP once the green status LED has turned solid. Navigate to my computer where an icon for the iCAM501 will be displayed as shown below. Right click on the iCAM501 icon and click properties.



When the camera is first plugged in click properties and the following display is likely to be shown.



If there are large numbers of pictures on the iCAM501 this may take some minutes as it will download thumbnails for the pictures when it is first plugged in. If it is taking an excessive amount of time try unplugging the USB cable and then reconnecting the device.



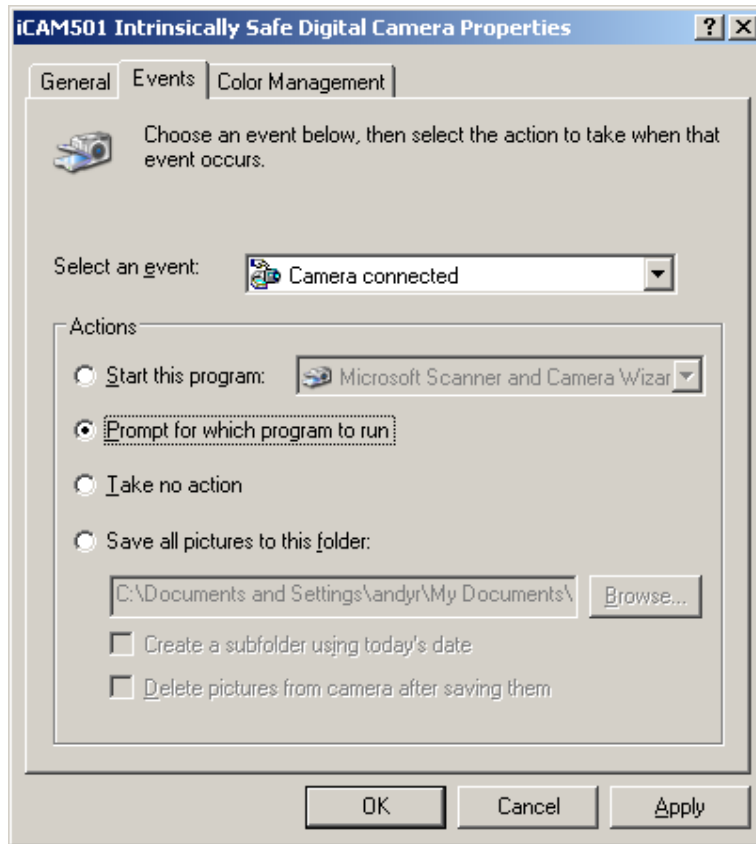
Now to set the time, simply click the set time button, it will then synchronize with the current Windows system time, you must therefore ensure that the Windows system time is also set correctly.

2.4.2 Setting Time and Date in Windows Vista / Windows 7

It is currently not possible to set the time and date of the iCAM501 using Windows Vista or Windows 7. This feature should be available in the near future.

2.5 Configuring How the Camera Behaves With Windows XP

When the iCAM501 is first plugged into a Windows XP machine you will be prompted to select an application to use to download the files from the Camera. This default action can be changed using the same method as used for setting the time, and then selecting the events tab. More information on downloading files can be found in section 2.8.



Choose from the following options:

Start this program: This allows you to tell Windows to automatically load a certain application when the camera is plugged in. This list may vary depending on which programs are installed. The default program should be "Microsoft Scanner and Camera Wizard. This is the built in camera managing software included in Windows.

Prompt for which program to run: This will make Windows display a list of programs which can manage the iCAM501 every time the iCAM501 is plugged into a PC

Take no action: With this setting Windows will not prompt the user to take any actions when the iCAM501 is plugged in.

Save all pictures to this folder: This setting will allow the user to set a directory where all pictures and audio files are automatically downloaded to when the iCAM501 is plugged into the PC. You also have the option to have all files downloaded to a folder with today's date and to delete the files from the camera once downloaded.

2.6 Configuring How the Camera Behaves With Windows Vista/Windows 7

When the iCAM501 is first plugged into a Windows Vista or Windows 7 machine you will be prompted to select an application to use to download the files from the Camera. This default action can be changed in the AutoPlay popup menu as shown below. It is possible to completely turn off the AutoPlay feature by selecting the “View more AutoPlay options in Control Panel”. From there you can disable the AutoPlay feature for all devices or just the iCAM501.

More information on downloading files can be found in section 2.8.



2.7 Camera Setup and Taking Pictures

There are a few different options available when taking a picture:

- A picture can be taken with no flash and no audio recording
- A picture can be taken with a flash to allow a good picture to be taken in low light conditions.
- A picture can be taken and an audio recording taken after the picture has been taken to provide an audio record for the picture.
- Or a picture can be taken with a flash and also create an audio recording.

Once a picture has been taken the LEDs and the buzzer are used to indicate if a good picture has been taken or not.

2.7.1 Enabling The Flash



Press the “FLASH” button to enable the flash feature of the camera.

Once the flash button is pressed the red LED will start to flash, after some seconds the LED will become solid indicating the flash has charged and is ready for use



2.7.2 Enabling the Audio Recording Feature



2.8 Taking a Picture and making an Audio Recording

To take a picture move your eye to the view finder and position the camera so that you can see what it is you would like to take a picture of, the point of interest should be at least 30cm from the lens. The reticule can be used to frame the image you want to capture. Note that the actual picture is about 15% larger either side of the actual viewfinder image.

Press and hold the large button (indicated as the "Picture Taking Button" above). The ON LED will then flash to indicate the picture taking process is active. Keep the camera as still as possible until the LED has stopped flashing. Once the camera has taken a picture the 3 LEDs will flash in a certain sequence to let you know if the picture taken was of a good quality. Once this occurs you can release the button unless you wish to create a voice recording (see below for more details). Note that if

you are not making a voice recording it is possible to just press the picture taking button momentarily if preferred.

The iCAM501 will analyse a taken picture for brightness and If the picture taken was taken in good lighting conditions all 3 LEDs will simultaneously flash on and then off 3 consecutive times along with the internal buzzer making an audible “beep”. The LED sequence that will occur is shown below (the buzzer also sounding at sequence 1, 3 and 5).

Sequence	LED 1	LED 2	LED 3
1			
2	Off	Off	Off
3			
4	Off	Off	Off
5			
6	Off	Off	Off

If the picture was taken in poor lighting conditions the LEDs will flash in the sequence indicated below and no audible beep will occur. If this occurs you will need to take a picture using the flash feature described below or improve the ambient lighting conditions

Sequence	LED 1	LED 2	LED 3
1	Off	Off	
2	Off		Off
3		Off	Off
4	Off	Off	
5	Off		Off
6		Off	Off
7	Off	Off	
8	Off		Off
9		Off	Off

The iCAM501 will still store the picture even if it is flagged up as being poor quality. The reason for this is that factors such as the lighting conditions may mean it is not possible to get a perfect picture and a poor one is better than no picture. However it is strongly recommended that another picture is taken.

If the flash is required when taking a picture in low lighting conditions, turn the flash on as indicated in the above section and wait until the red LED stays constantly on. Note the flash can take up to 20 seconds to fully charge when the batteries are part used. Once the red LED has turned solid the iCAM501 is then ready to take a picture in the same way as if the flash was not enabled (the flash will automatically trigger when the picture is being taken).

Note that the iCAM501 has an anti-shake function. It takes four pictures and then selects the best quality one to save to the flash memory. This is the reason that the flash fires 4 times.

To make an audio recording once a picture has been taken, take the picture as normal (described above) but do not release the picture taking button. Once the picture taking process is complete and the picture quality LED sequence has finished

start to speak normally into the microphone. Note that the optimum distance is up to 10cm from the mouth which ensures that not too much background noise is picked up. Once the audio recording is finished simply release the button and the recording will be saved to the flash memory as a *.wav file with the same filename as the image file.

2.9 Downloading Pictures and Audio

The iCAM501 has been designed to use the widely supported Picture Transfer Protocol (PTP) to allow it to easily communicate with multiple operating systems without having to install drivers. It automatically generates files with the following name structure:

iCAM501_HHMMSS-DDMMYYY.jpg

Where:

HH = Hour

MM = Minutes

SS = Seconds

DD = Day

MM = Month

YYYY = Year

A computer running a supported operating system and a free USB port is all that is required.

To download the pictures and audio from the camera to a PC, remove the cover by turning the screw. A mini USB socket is then visible. Plug the mini USB end of the USB cable into this socket and the other standard USB plug end into the PC.

2.9.1 Manually Downloading Pictures & Audio

The iCAM501 will show up as a universal mass storage device to any host operating system, much like a USB flash drive does (expect it will not have a drive letter assigned to it).

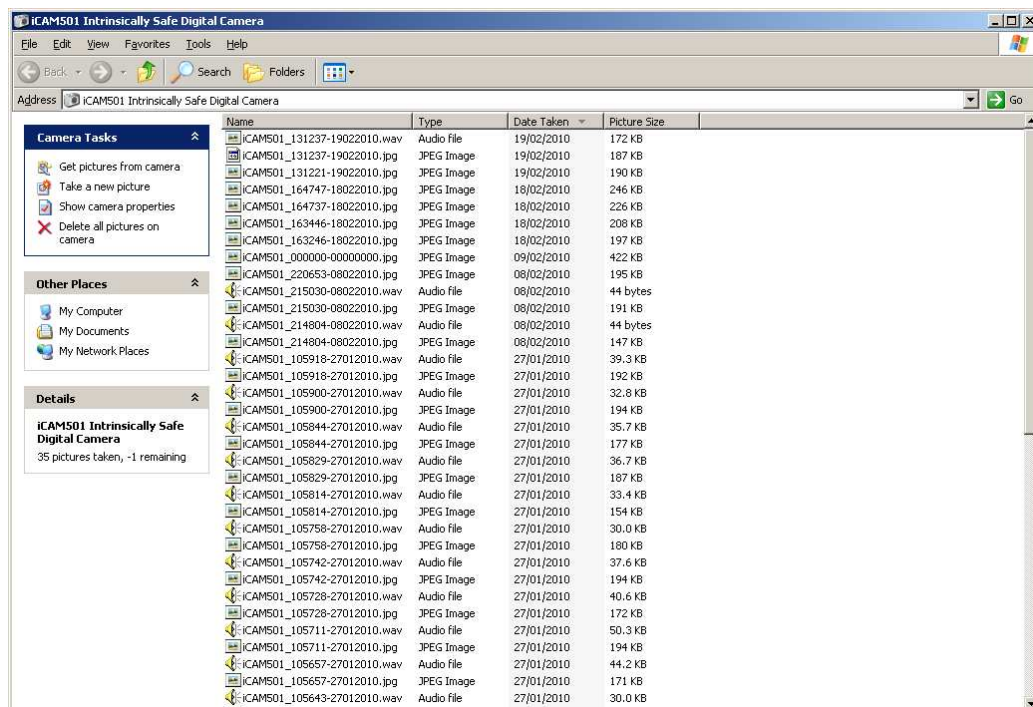
This make is easy to manually download pictures by simply exploring the iCAM501 using the Operating System's built in browsing functions. To download files browse to the iCAM501(this is displayed in My Computer if being used under a Windows Environment), here you should be able to see all of the files currently present on the iCAM501. From here you can copy the required files to a destination folder in exactly the same way as you would copy files from any other folder under the Operating System being used.

2.9.2 Using Windows XP Microsoft Scanner and Camera Wizard

If the Microsoft Scanner and Camera Wizard is chosen to automatically start when the camera is plugged in a window should then pop up similar to that below:

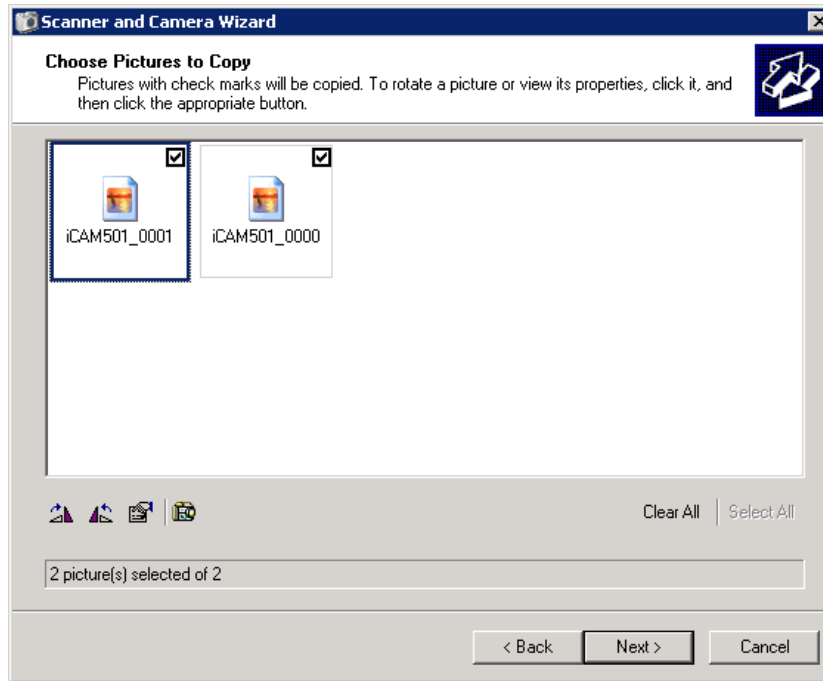


If you have recorded an audio image you will need to click the advanced users only link in the window to access these files, the following window will then be displayed allowing you to copy and paste the pictures.

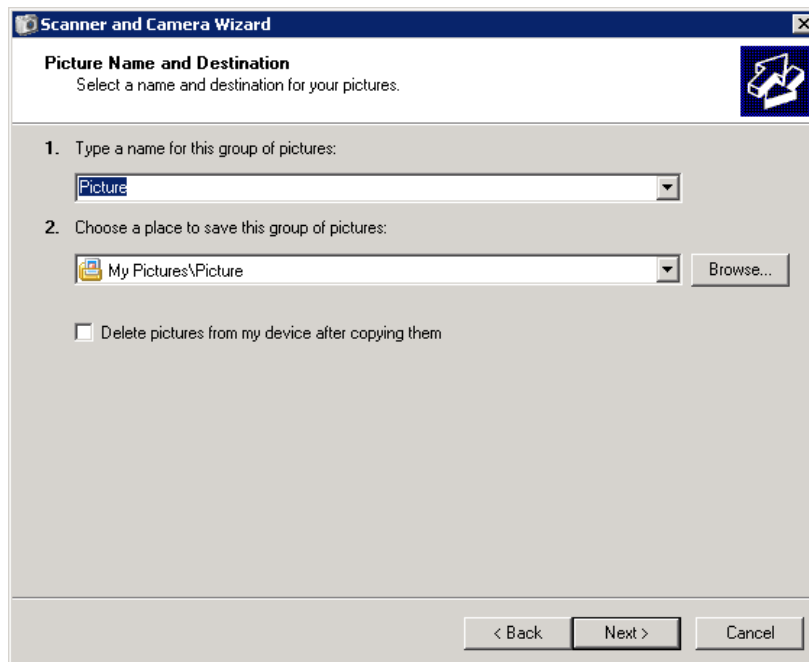


You will notice the audio file has been saved with the same numeric value as the picture it is linked to.

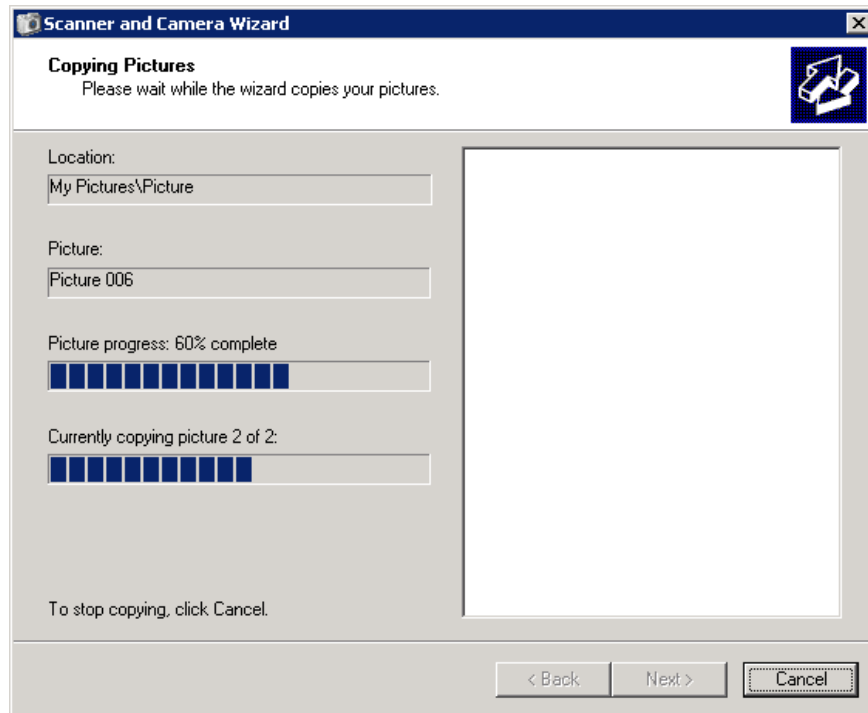
If you do not have any audio to download you could use the PTP feature to quickly move pictures to a folder of your choice. To do this click the next button and the windows below will appear, here select the images you wish to use and click next again



Then select the folder where you wish to save the pictures to



You will be presented with a progress bar indicating the transfer of the pictures

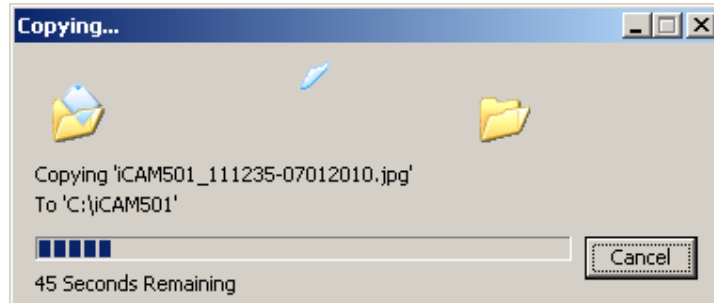


Then select “nothing, I’m finished working with these pictures” and click next and then the screen below will appear. This gives you the option to open the folder where the pictures were stored to or just click finished to exit the wizard.



2.9.3 Using Windows XP Automatic Picture Download Feature

If the Automatic picture download feature was selected in section 2.5 then once the iCAM501 has been connected to the PC all files (both pictures and audio) will automatically be copied to the PC with a progress bar indicating this process.



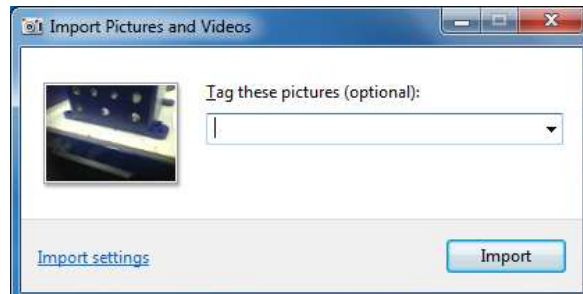
Once downloaded Windows should then automatically open the folder where the pictures are located. If it does not automatically open you can then browse to the folder set in section 2.5 to view the files. If the “create folder with today’s date” option was selected the pictures will be in an individual folder.

If a file with the same file name is already in the download folder Windows will prompt if you wish to replace these files.

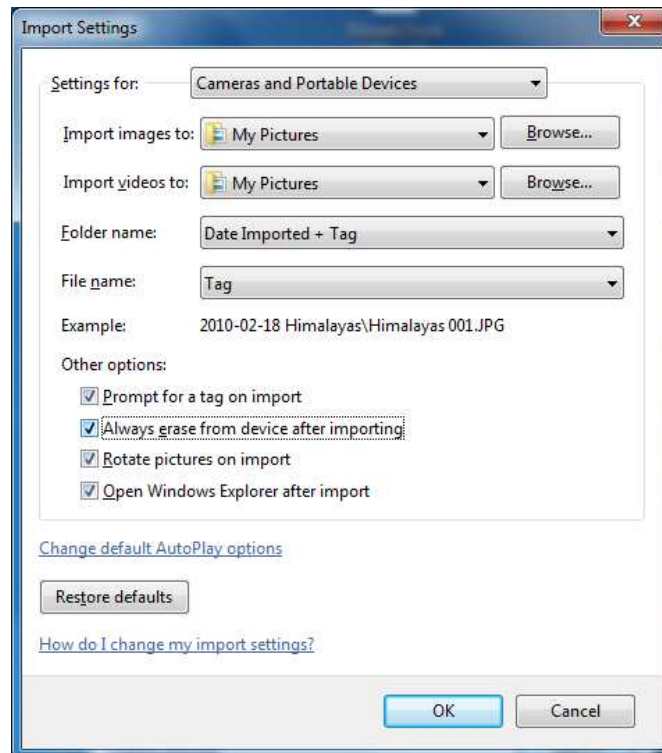
2.9.4 Using Windows Vista / Windows 7 Import Pictures and Videos Wizard

By clicking on the import pictures and video option you will be presented with the following window. Note by using this feature audio files will not automatically be imported from the iCAM501. Audio files must be downloaded manually using Windows explorer as the import wizard does not copy audio files.

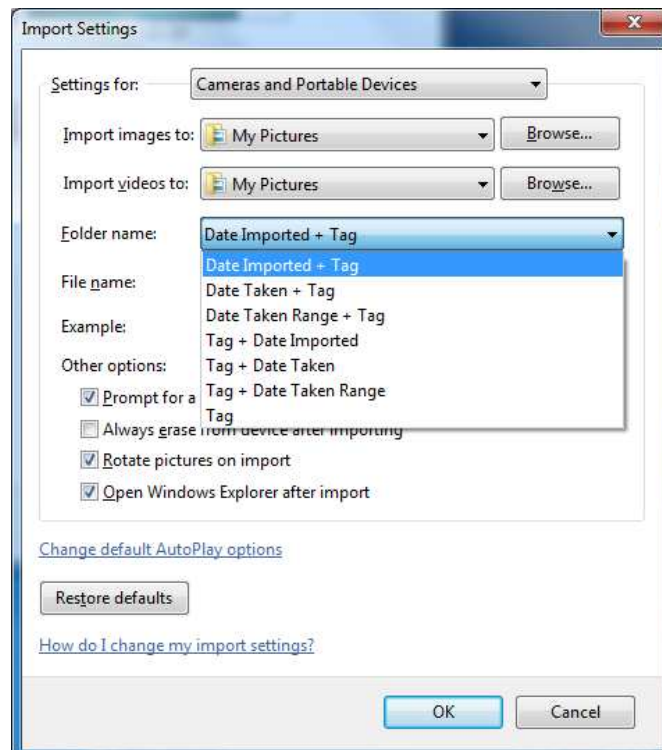
You can enter a tag for the pictures which are to be downloading by entering the text into the field below. For example if you type in “Site Survey” then depending on the import setting chosen the folder and/or pictures will contain the tag for easy reference.



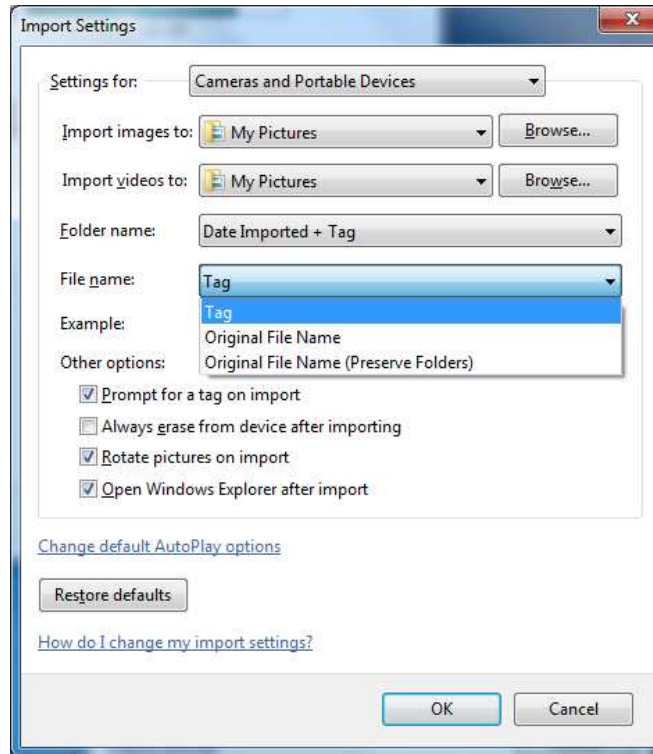
Click on the Import settings to customize the where and the way in which Windows will import the pictures.



Here you can select you preferences for downloading pictures.
 You can choose the folder where all pictures should be imported to by clicking the browse button.
 Select the option for how a folder name is created when downloading pictures. I.e. it will import to ..\My pictures\Date Imported + Tag\



Select an option for how a file name is constructed. E.g. ..\My pictures\Date Imported + Tag\Tag xxx.jpg. This will rename all imported files to the tag plus a number. Select original file name if you wish to preserve the filename created by the iCAM501 as described in section 2.9.

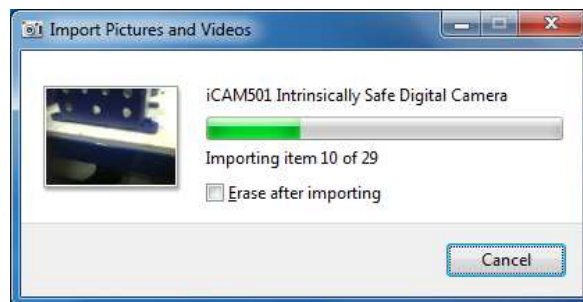


If prompt for tag on import is not selected the pictures will automatically be imported without a tag.

You can automatically erase all imported files from the iCAM501 by selecting the always erase option

Open Windows Explorer after import will automatically open the folder containing the latest files imported.

Click ok and then click import, a progress bar will appear showing the progress of the import.



Once imported if the automatically open Windows Explorer option was selected the folder containing the pictures will open. If it does not open then use Windows Explorer to navigate to the import folder which was chosen in the import settings window.

2.10 Upgrading Firmware

Information If you accidentally put the iCAM501 into upgrade mode the only way to get out of this mode is to remove a battery. This is a deliberate feature to stop the unit from being accidentally switched off during an upgrade

Important If you decide to perform a firmware upgrade it is recommended to put a brand new pair of cells into the iCAM501 so that the unit cannot lose power during the upgrade.

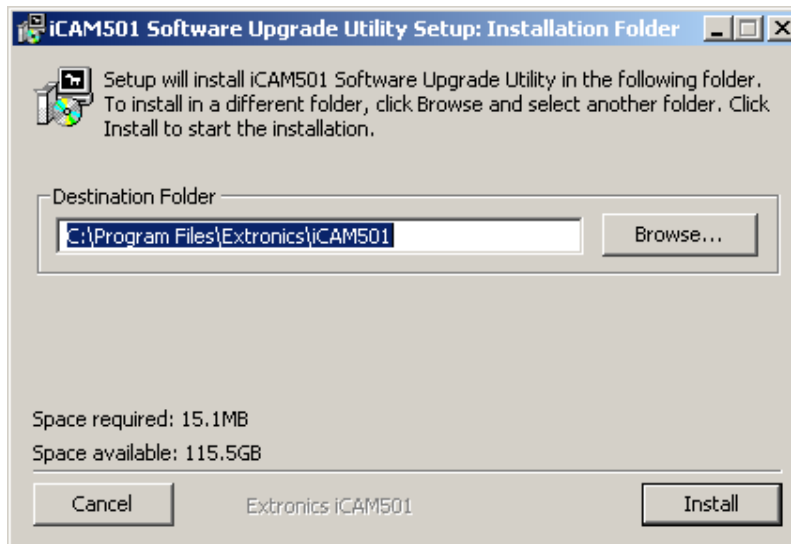
Important Do not remove the USB cable from the iCAM501 until the upgrade has completed or you may render the iCAM501 unusable.

Information The iCAM501 can only be upgraded under Windows XP/Vista/7

From time to time Extronics will release firmware updates which will enhance and improve iCAM501. In order to perform a software upgrade the iCAM501 must be put into upgrade mode. First ensure the unit is powered down. Then press and hold the flash button and picture taking button at the same time for approx 2 seconds. The middle blue LED should then flash indicating it is in upgrade mode.

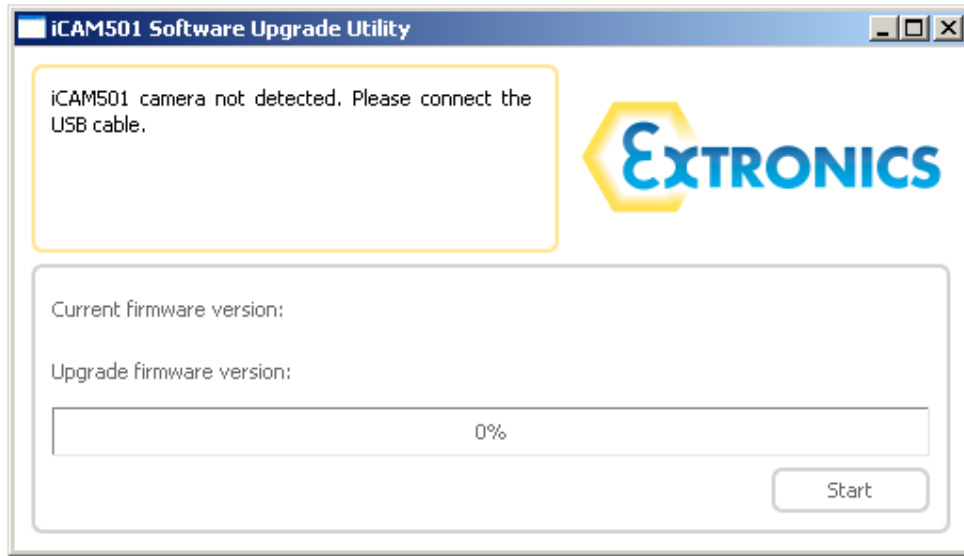
Once in this mode connect a PC running Windows XP/Vista/7 to the unit via a USB cable and run the upgrade file which has been obtained from Extronics. The unit should power itself off once the upgrade is complete.

Under Windows XP/Vista/Windows 7, simply run the upgrade installer provided. When the window below is shown, select the desired location and press 'Install'. If you are asked about installing software from an unknown vendor, just press the 'continue' button.



Once installation is complete, go to Start -> Programs -> Extronics -> iCAM501 and run the desired installation configuration.

The following window should be displayed:



To put the iCAM501 into upgrade mode, power the camera down and then press and hold the 'trigger' and 'flash enable' buttons until the blue LED begins flashing (this should be the only LED lit).

Next, plug a USB cable into the iCAM501, and into the PC. The upgrade application should then prompt you to press the start button once it has recognised the iCAM501 is connected and in the correct mode. Follow the on-screen instructions.

Once complete, the camera will power itself off. Simply power it back on as normal (press and hold the 'flash enable' and 'record enable' buttons together). It will now be running the upgraded software.

2.11 Error Codes

If the iCAM501 has all 3 LEDs constantly flashing it means that it is in an unrecoverable state. The only way to get it out of this state is to remove the batteries and then replace them.

3 Structure and Function

3.1 Intended Purpose Usage

Important	Before setting the unit to work, read the technical documentation carefully.
------------------	---

Important	The latest version of the technical documentation or the corresponding technical supplements is valid in each case.
------------------	--

The iCAM501 is built using modern components and is extremely reliable in operation; however it must only be used for its intended purpose. Please note that the intended purpose also includes compliance with the instructions issued by the manufacturer for installation, setting up and service.

Any other use is regarded as conflicting with the intended purpose. The manufacturer is not liable for any subsequent damage resulting from such inadmissible use. The user bears the sole risk in such cases.

3.2 Transportation and Storage

All iCAM501 devices must be so transported and stored so that they are not subjected to any excessive mechanical or environmental stresses.

3.3 Authorized Persons

Only persons trained for the purpose are authorized to handle the iCAM501; they must be familiar with the unit and must be aware of the regulation and provisions required for explosion protection as well as the relevant accident prevention regulations.

3.4 Cleaning and Maintenance

The iCAM501 and all its components require no maintenance. All work on the iCAM501 by personnel who are not expressly qualified for such activities will cause the Ex approval and the guarantee to become void.

3.5 Safety Precautions

Important	For the installation, maintenance and cleaning of the units, it is absolutely necessary to observe the applicable regulations and provisions concerned with explosion protection (EN 60079-0, EN 60079-14) as well as the Accident Prevention Regulations.
------------------	---

3.6 Cleaning and Maintenance Intervals

The cleaning intervals depend on the environment where the system is installed.

3.7 Aggressive substances and environments

The iCAM501 is not designed to come into contact with aggressive substances or environments, please be aware that additional protection may be required.

3.8 Exposure to external stresses

The iCAM501 is not designed to be subjected to excessive stresses e.g. vibration, heat, impact. Additional protection is required to protect against these external stresses.

The iCAM501 will require additional protection if it is used in a location where it may be subjected to damage.

4 Technical Data

Certification Number	ITS09ATEX26868X, IECEx ITS 09.0027X
ATEX Certification	II 1 G Ex ia IIB T4 Ga, II 2 G Ex ia IIC T4 Gb
IECEx Certification	II 1 G Ex ia IIB T4 Ga, II 2 G Ex ia IIC T4 Gb
FM Certification	Class 1 Div 1 ABCD T4 - Pending
Compliance	EMC: EN 55022 1998 class B, EN 55024 1999 LV: EN 60950 2002
Dimensions	132mm x 32mm x 22mm (5.20" x 1.26" x 0.87")
IP Rating	IP65
Operating Temperature	-20°C to +60°C
Weight	Approx 200g including batteries
Housing	Injection moulded anti static plastic housing
Relative humidity	95% RH non condensing
Power	2 x Alkaline AA batteries, refer to Ex Certificate for details on range of approved batteries
Memory	On board 1Gbyte NAND Flash (holds approx 5,000 JPEG images without any audio recording and additional 960Kbytes per min for audio)
Image	3.1 Mega-Pixel (2048 x 1536 resolution)
Lens	1/4" format lens, F/#2.8, focal length 3.8mm
Focal Distance	30 cm to infinity
View Finder	Two element optical view finder
Power Modes	Operate and auto power-down (after 2 mins)
Battery Life	Up to 800 shots without flash and up to 150 shots with flash taken one after the other. 310 shots as per the CIPA DC-002 standard (mixed mode shots with and without flash) Note it is very difficult to be precise about exact numbers as there are many factors that can influence this such as the ambient temperature, how long the camera is powered up, number of voice recordings made and the number and length of time it is connected to a PC for transferring picture and voice data.
Connectivity	USB 1.1 via mini-USB socket for use in the safe area only. Certified for direct connection to a PC without requiring an external protection barrier
OS Support	PTP imaging device in Windows 2000/XP/Vista/7, Mac OsX 10.x and most versions of Linux. USB firmware upgrade utility for Windows XP/2000/Vista/7 only.
Flash	4 LED flash giving 43.7 lux.seconds of energy at 67ms exposure
Audio recording format	16KHz 16bit Microsoft Wave Format
Image format	jpeg
Time and Date	Time and date stamping of stored images Time and date set via Picture Transfer Protocol (PTP) automatically

5 Certification



Hazardous Area Specialists

EC Declaration of Conformity

Extronics Ltd, Meridian House, Roe street, Congleton, CW12 1PG UK

Declare under sole responsibility that the product,

iCAM501

To which this declaration relates is in accordance with the provision of the following directives

94/9/EC	Equipment and protective systems intended for use in potentially explosive atmospheres.
2006/95/EC	Low Voltage Directive
2004/108/EC	CE marking for Electromagnetic Compatibility Directive
2002/95/EC	Restriction of the use of certain hazardous substances in
2002/96/EC	Waste Electrical and Electronic Equipment Directive (WEEE) electrical and electronic equipment (RoHS)

EC type Examination Certificate

ITS 09ATEX 26868X

Provisions of Directive fulfilled by the equipment

**II 1 G Ex ia IIB T4 Ga
II 2 G Ex ia IIC T4 Gb**

Notified Body for EC Type Examination

Intertek, 1712, ITS, Leatherhead UK

Notified Body for production

SIRA, 0518, Sira Chester UK

And is in conformity with the following standards or other nominative documents



EN60079-0:2009	Electrical apparatus for potentially explosive gas atmospheres – General requirements
EN60079-11:2007	Electrical apparatus for potentially explosive gas atmospheres – Equipment protection by intrinsic safety 'i'
EN60079-26:2007	Electrical apparatus for potentially explosive gas atmospheres – Equipment with equipment protection level (EPL) Ga
EN60950-1:2006	Information technology equipment - Safety - Part 1: General requirements
EN55022:2006 (+A1:2007)	Information technology equipment. Radio disturbance characteristics. Limits and methods of measurement
EN55024:1998(+A2:2003)	Information technology equipment. Immunity characteristics. Limits and methods of measurement

Signed

Date : 16/02/2010

Nick Saunders
Technical Services Manager

6 ATEX Certificate/IECEx Certificate

	
<p>1. EC-TYPE EXAMINATION CERTIFICATE</p>	
<p>2. Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC</p>	
<p>3. EC-Type Examination Certificate Number: ITS09ATEX26868X</p>	
<p>4. Equipment or Protective System: iCAM501 Intrinsically Safe Digital Camera</p>	
<p>5. Manufacturer: EXTRONICS LIMITED</p>	
<p>6. Address: Meridian House Roe Street, Congleton Cheshire, CW12 1PG United Kingdom</p>	
<p>7. This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.</p>	
<p>8. Intertek Testing and Certification Limited, notified body number 0359 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.</p>	
<p>The examination and test results are recorded in confidential Intertek Report Ref 09038825 Issue 1 dated December 2009.</p>	
<p>9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2009, EN 60079-11:2007 and EN 60079-26:2007 except in respect of those requirements referred to at item 18 of the Schedule.</p>	
<p>10. If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.</p>	
<p>11. This EC Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.</p>	
<p>12. The marking of the equipment or protective system shall include the following:-</p>	
<p> II 1 G Ex ia IIB T4 Ga</p>	
<p> II 2 G Ex ia IIC T4 Gb</p>	
<p>-20°C ≤Ta ≤60°C</p>	
<p> A T Austin Certification Officer 15 December 2009</p>	
<p>Intertek Testing & Certification Limited Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977 http://www.uk.intertek-etlsemko.com Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA</p>	
<p>This certificate may only be reproduced in its entirety and without any change, schedule included and is subject to Intertek Testing and Certification Conditions for Granting Certification.</p>	
<p>Sheet 1 of 3</p>	



13. SCHEDULE

14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS09ATEX26868X

15. DESCRIPTION OF EQUIPMENT OR PROTECTIVE SYSTEM

The **EXTRONICS LIMITED ICAM501** is an intrinsically safe digital camera with a voice recording function. It comprises an anti static PC/ABS enclosure housing an assembly of 3 PCB's; a CPU board, a keypad board and an LED flash board. The CPU and keypad PCB stack is encapsulated along with the camera lens assembly. The LED flash board is soldered to the encapsulated board assembly and the LED flash units are encapsulated.

The camera is powered by 2 off Duracell (or Duracell Procell) MN1500 AA alkaline cells, housed within the camera's battery compartment, accessible by a cover opened by a quarter turn screw.

The Duracell MN1500 AA alkaline cells are spark ignition safe for gas group IIC, temperature class T4 at +60°C ambient temperature and a tool operated fastener for the battery compartment is not required. Changing the batteries in the hazardous area is permitted.

Underneath the battery compartment cover is a USB port for the purposes of offloading picture or other data or for programming the camera. The unit may be connected to any PC or similar device with a USB port.

Um = 250V ac

16. REPORT NUMBER

Intertek Report Ref 09038825 Issue 1 dated December 2009.

17. SPECIAL CONDITIONS FOR SAFE USE

The condition of safe use relating to this product:

The user shall not carry more than a maximum of 2 spare MN 1500 AA Cells into the hazardous area. Precautions shall be taken to prevent short circuiting of un-protected battery terminals. Discharged cells shall be removed from the hazardous area.

Conditions of manufacture relating to the product / routine tests:

None

18. ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (EHSR'S)

The relevant EHSR's have been identified and assessed in Intertek Report Ref 09038825 Issue 1 dated December 2009.

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977
<http://www.uk.intertek-ettsemko.com>
Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

This Certificate is the property of Intertek Testing and Certification Ltd
and is subject to Intertek Testing and Certification Conditions for Granting Certification.

Sheet 2 of 3



13. SCHEDULE

14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS09ATEX26868X

19. DRAWINGS

Title:	Sheets:	Drawing No.:	Rev. Level:	Date:
General Arrangement Drawings	3	324963	01	24/11/2009
Main PCB Schematic	10	324388	03	24/11/2009
Keypad PCB Schematic	1	322847	04	24/11/2009
Flash LED board schematic	1	323507	03	24/11/2009
Main PCB BOM	2	324389	03	24/11/2009
Keypad PCB BOM	2	323878	04	24/11/2009
Flash LED board BOM	1	323868	02	24/11/2009
Main PCB Layout	17	325886	03	24/11/2009
Keypad PCB Layout	5	323465	04	24/11/2009
Flash LED board PCB Layout	5	323508	03	24/11/2009
Label Drawing	1	325998	01	08/12/2009

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977
<http://www.uk.intertek-ettsemko.com>
Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA


This Certificate is the property of Intertek Testing and Certification Ltd
and is subject to Intertek Testing and Certification Conditions for Granting Certification.

Sheet 3 of 3



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
 for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx ITS 09.0027X	issue No.:0	Certificate history:
Status:	Current		
Date of Issue:	2009-12-15	Page 1 of 3	
Applicant:	Extronics Limited Meridian House Roe Street Congleton Cheshire CW12 1PG United Kingdom		
Electrical Apparatus:	iCAM501 Intrinsically Safe Digital Camera		
Optional accessory:			
Type of Protection:	Intrinsic Safety		
Marking:	Extronics Ltd IECEx ITS 09.0027X Ex ia IIB T4 Ga Ex ia IIC T4 Gb -20°C < Ta < +60°C		
Approved for issue on behalf of the IECEx Certification Body:	A T Austin		
Position:	Certification Officer		
Signature: (for printed version)			
Date:	<u>15 Dec 2009</u>		

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
Intertek Testing & Certification Limited
 ITS House, Cleeve Road,
 Leatherhead,
 Surrey, KT22 7SB
 United Kingdom





IECEx Certificate of Conformity

Certificate No.: IECEx ITS 09.0027X

Date of Issue: 2009-12-15

Issue No.: 0

Page 2 of 3

Manufacturer: **Extronics Limited**
Meridian House
Roe Street
Congleton
Cheshire
CW12 1PG
United Kingdom

Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2007-10 Edition: 5	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

GB/ITS/ExTR09.0039/00

Quality Assessment Report:

GB/SIR/QAR08.0025/00



IECEx Certificate of Conformity

Certificate No.: IECEx ITS 09.0027X

Date of Issue: 2009-12-15

Issue No.: 0

Page 3 of 3

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The **EXTRONICS LIMITED ICAM501** is an intrinsically safe digital camera with a voice recording function. It comprises an anti static PC/ABS enclosure housing an assembly of 3 PCB's; a CPU board, a keypad board and an LED flash board. The CPU and keypad PCB stack is encapsulated along with the camera lens assembly. The LED flash board is soldered to the encapsulated board assembly and the LED flash units are encapsulated.

The camera is powered by 2 off Duracell MN1500 AA alkaline cells, housed within the camera's battery compartment, accessible by a cover opened by a quarter turn screw. The Duracell MN1500 AA alkaline cells are spark ignition safe for gas group IIC and Temperature Class T4 in an upper ambient temperature of +60°C and a tool operated fastener for the battery compartment is not required. Changing the batteries in the hazardous area is permitted.

Underneath the battery compartment cover is a USB port for the purposes of offloading picture or other data or for programming the camera. The unit may be connected to any PC or similar device with a USB port.

USB Interface: Um = 250V ac

CONDITIONS OF CERTIFICATION: YES as shown below:

The user shall not carry more than a maximum of 2 spare MN 1500 AA Cells into the hazardous area.

Precautions shall be taken to prevent short circuiting of un-protected battery terminals. Discharged cells shall be removed from the hazardous area.

7 Manual Revision

Revision	Description	Date	By
01	Initial release – Safety Instructions only	24/11/2009	AJR
02	Added User instructions + Various Changes	15/12/2009	AJR
03	Various errors amended, added C of C, Added Windows Vista/7 Information	19/02/10	AJR



WWW.CABLEJOINTS.CO.UK
THORNE & DERRICK UK
TEL 0044 191 490 1547 FAX 0044 477 5371
TEL 0044 117 977 4647 FAX 0044 977 5582
WWW.THORNEANDDERRICK.CO.UK