





## EC-TYPE EXAMINATION CERTIFICATE

1. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**
2. **EC-Type Examination Certificate Number:** ITS09ATEX26868X Issue 5
3. **Equipment or Protective System:** iCAM501 Intrinsically Safe Digital Camera
4. **Manufacturer:** EXTRONICS LIMITED
5. **Address:** 1 Dalton Way,  
Midpoint 18, Middlewich,  
Cheshire, CW10 0HU, UK.
6. This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
7. 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.
- The examination and test results are recorded in confidential Intertek Reports 09038825 Issue 1 dated December 2009, 11052589 Issue 1 dated July 2011, 11051967 Issue 1 dated September 2011, 12057976 Issue 1 dated July 2012 and G101452954 Issue 1 dated April 2014.
8. Compliance with the Essential Health and Safety Requirements has been assured by compliance with standards EN 60079-0:2009, EN 60079-11:2007, EN 60079-26:2007 and EN 50303:2000 except in respect of those requirements referred to at item 16 of the Schedule.
9. 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.
10. 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.
11. The marking of the equipment or protective system shall include the following:-
-  II 1 G Ex ia IIB T4/T3 Ga  $-20^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$
-  II 2 G Ex ia IIC T4/T3 Gb  $-20^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$
-  I M1 Ex ia I Ma  $0^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$

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**Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.**

  
**A M Smart**  
Certification Officer  
14<sup>th</sup> April 2014

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## SCHEDULE

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#### 13. Description of Equipment or Protective System

The EXTRONICS LIMITED iCAM501, iCAM501U and iCAM502 are intrinsically safe digital cameras 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 AA alkaline cells connected in series and housed within the camera's battery compartment, accessible by a cover opened by a quarter turn screw. The AA alkaline cells are spark ignition safe for gas group IIC and Temperature Class T4 or T3 depend of type of cell used and the upper ambient temperature of +60°C. Changing the batteries in Group II hazardous areas is permitted. The iCAM501U and iCAM502 version of the camera may also be used in Group I applications, with reduced ambient temperature range  $0^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$  with respect to special conditions of use.

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:  $U_m = 250\text{V ac}$

#### 14. Report Number

Intertek Reports Ref: 09038825 Issue 1 dated December 2009, 11052589 Issue 1 dated July 2011, 11051967 Issue 1 dated September 2011, 12057976 Issue 1 dated July 2012 and G101452954 Issue 1 dated April 2014.

#### 15. Conditions of Certification

##### (a). Special Conditions for safe use

- For Group II applications only, the user shall not carry more than a maximum of 2 spare approved AA Cells into the hazardous area. Precautions shall be taken to prevent short circuiting of unprotected battery terminals. Discharged cells shall be removed from the hazardous area.
- The Temperature Class for the equipment is determined by type of batteries used:  
T4: Duracell MN 1500  
T3: Duracell Procell PC 1500, Energizer E91, Panasonic LR6XWA
- For Group I applications, the changing of the batteries in the hazardous area and the transportation of spare batteries into the hazardous area are not permitted.
- Duracell MN 1500 is the only type of battery permitted for Group I applications.
- The USB port shall only be connected in the non-hazardous area.
- If the camera is damaged in any way, it shall be removed from the hazardous area.

##### (b). Conditions of Manufacture

- None

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### 16. Essential Health and Safety Requirements (EHSR's)

The relevant EHSR's have been identified and assessed in Intertek Reports Ref: 09038825 Issue 1 dated December 2009, 11052589 Issue 1 dated July 2011, 11051967 Issue 1 dated September 2011, 12057976 Issue 1 dated July 2012 and G101452954 Issue 1 dated April 2014.

### 17. Drawings and Documents

Title	Drawing No.:	Rev. Level:	Date:
General Arrangement Drawings (iCAM501/U)	324963	02	26/07/2011
iCAM502 General Arrangement Drawings	332002	01	20/03/2012
Main PCB Schematic	324388	03	24/11/2009
Main PCB Schematic	330423	01	23/03/2012
Keypad PCB Schematic	322847	04	24/11/2009
Flash LED board schematic	323507	04	02/03/2012
Main PCB BOM	324389	03	24/11/2009
Bill of Materials for iCAM502 Main PCB	401634	1.2	03/12/2013
Keypad PCB BOM	323878	05	17/07/2012
Flash LED board BOM	323868	04	20/03/2012
Main PCB Layout	325886	04	27/07/2011
Main PCB Layout	330132	01	23/03/2012
Keypad PCB Layout	323465	05	27/07/2011
Keypad PCB Layout	323465	06	08/05/2012
Keypad PCB Layout	323465	07	11/07/2012
Flash LED board PCB Layout	323508	04	27/07/2012
Flash LED board PCB Layout	323508	05	04/05/2012
iCAM501U ATEX Safety instructions Type Drawing	331684	01	20/09/2011
iCAM501U ATEX Safety instructions Type Drawing for T4/T3 Cells	333366	01	17/07/2012
iCAM502 ATEX Safety instructions Type Drawing	333303	01	17/07/2012
iCAM501U Certification Label	325998	03	17/07/2012
iCAM501U Certification Label for T4/T3 Cells	333367	01	18/04/2012

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#### 18. Revisions

##### Issue 2 – June 2011

- Use of alternative flash LED part.

##### Issue 3 – September 2011

- Introduction of alternative enclosure material for model iCAM501U.
- Addition of M1 marking on model iCAM501U.
- Updates to drawings.

##### Issue 4 – July 2012

- Introduction of alternative modified model iCAM502.
- Use of new boards used in iCam502 as alternatives for existing models.
- Introduction of new alternative batteries.
- Addition of T3 marking when used with alternative batteries.
- Updates to drawings.

##### Issue 4 – February 2013 (Amended)

- The following typographical errors have been corrected:
- Removed the "Procell" description from the Duracell MN1500 battery text.
- Amended drawing number 321407 to be 323868 in the drawing table.

##### Issue 5 – April 2014

- Introduction of alternative camera module for use in iCAM502.
- Amended drawing number 401634 Rev 1.2 replacing 329870 Rev 1 to reflect modification of BOM lists including the alternative camera module.

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