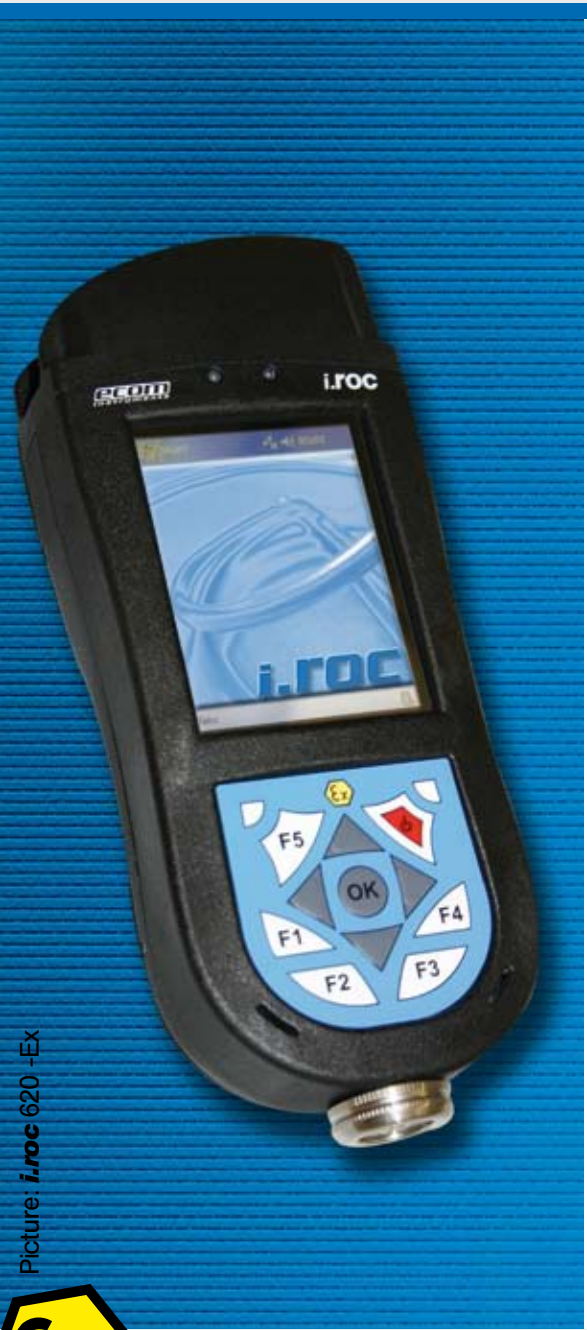
Communication
Torches/Flashlights
Mobile Computing
Measuring & Calibration

ecom instruments
mobile experts



Picture: ***i.roc*** 620 -Ex

i.roc x20 (-Ex) Pocket PC

Safety instructions
(Long version)

Table of contents

Note:
The current operating instructions, EC Declaration of Conformity and the Ex-certificate are available for download from the relevant product page under **www.ecom-ex.com**; alternatively they can be requested directly from the manufacturer.

1. General information about these instructions

With the purchase of this product from ecom instruments GmbH you have obtained a reliable, high-performance solution for everyday work in the industrial environment.

Before beginning operation, the associated documents should always be read carefully by skilled personnel. These safety instructions contain information and safety regulations that must be followed to ensure safe and reliable operation during installation, start-up, normal operation and shut-down of the unit under the described conditions. Non-observance of the information and instructions can have dangerous consequences and/or may contravene applicable regulations.

In the event of any doubt or discrepancies (for example, due to translation or printing errors), the German version of these safety instructions shall prevail. For legal purposes our „General terms and conditions“ shall also apply as a supplement to these instructions.

We reserve the right to change the contents of this document without notice. No responsibility is taken for the correctness of information provided in this publication. Specifically, this information does not contain any warranted characteristics. Any risks arising from the use of this information shall be borne by the user.

The current version of this short version of the safety instructions, the long version of the safety instructions, of the „Introduction“ or „Getting started“ booklets, EC Declaration of Conformity and the Ex-certificate are available for download from the relevant product page under www.ecom-ex.com; alternatively they can be requested directly from ecom instruments GmbH.

2. Errors and load restrictions

If there is any risk that the safety or integrity of the unit has been compromised, the unit must be taken out of operation immediately and removed from the Ex-area without delay. Action must be taken to prevent the device from being accidentally placed into operation again.
We recommend sending the unit back to ecom instruments GmbH to be examined.

The safety and reliability of the unit may be at risk if, for example:
- Damage is visible on the housing
- The unit has been subjected to excessive loads for which it is not designed
- The unit has been improperly stored
- The unit has been damaged in transit
- Labels or markings on the unit are illegible
- Malfunctions occur
- Permitted tolerances or threshold values have been exceeded
- In the presence of firedamp, the ***i.roc*** 62***** -Ex must be taken out of operation.

3. Safety regulations – General safety instructions

Persons using the unit must observe the standard safety regulations and read the certificate to prevent incorrect operation or misuse of the unit.

The following additional safety regulations must also be observed:

- The unit must not be opened within the Ex-area.
- The battery may only be changed by ecom instruments GmbH or a person trained by ecom instruments GmbH outside of the Ex-area.
- Additional or spare batteries must not be carried in the Ex-area.
- The battery may only be charged outside the Ex-area with the designated charging device LG x10 or USB x10.
- After the battery is charged, observe a waiting period of 3 minutes and conduct a brief functional test before taking it into the Ex-area.
- Avoid using the unit in aggressive acidic or alkaline solutions.
- Ensure that the i.roc 62***** -Ex unit is not taken into Zone 0 or 20 areas.
- Ensure that the i.roc 52***** -Ex unit is not taken into Zone 1/0 or 21/20 areas.
- Ensure that the i.roc 42***** unit is not taken into the Ex-area.
- Electromagnetic waves, which can arise with the i.roc when using WLAN or Bluetooth functions, can cause disturbances and endanger your health! Since no definite statements can currently be made about the immunity from disturbances of heart pacemakers, we recommend users of pacemakers to avoid using transmitters generally.
- Do not transmit near persons with pacemakers!
- Do not direct the infrared beam of the integrated IrDA, the LEDs of the optional barcode imager, or the laser beam of the optional barcode reader at another person‘s eyes, or at other equipment unless you are sure that no malfunctions will result.
- Permission to use electronic devices in aeroplanes is up to the respective airline.
- Avoid effects of elevated heat: Do not place the device near heat sources, such as radiators, air-conditioner air exit openings, stoves or other devices (including amplifiers) that radiate heat.
- Avoid effects of moisture.
- Do not put any objects into the product: Do not put objects into the housing or other product openings. These openings must not be obstructed, blocked or covered.
- Set-up: Never set up the product on a table, vehicle, stand or holder that is not stable. Follow the manufacturer‘s instructions when setting up or installing the product, and use the accessories recommended by the manufacturer for installation.
- Adjust loudness: Reduce the volume before using earphones or other audio devices.

4. Possible equipment, options and accessories

The basic version of the i.roc x20 can be fitted with optional device heads. These device heads may only be exchanged by ecom instruments GmbH or a person trained by ecom instruments GmbH outside of the Ex-area. Only the device heads and accessories listed in the long version of these safety instructions are approved for use in the Ex-area.

4.1 PDA i.roc 420	***Ruggedized Industrial PDA***
RF x10 -Ex /AD	13,56 MHz RFID Read/Write Module (ISO 15693)
RF x10 -Ex /AM	13,56 MHz RFID Read/Write Module
RF x11 -Ex /AC	125 kHz RFID Reader
RF x11 -Ex /FE	125 kHz RFID Reader
RF x11 -Ex /AT	134 kHz RFID Reader
BC x10 -Ex	2D Barcode Imager Module
BC 411	1D Laserscanner NON EX
RS 410	Headmodule with serial connector
HS x10 -Ex	Headset connector for HDC-9 Headset with modified plug
MCT202	Honeywell HART Modem
Pistolgrip	HG x10 -Ex
Handgrip	HG x11 -Ex
Leathercases	

4.2 Ex-PDA i.roc 520 -Ex	***ATEX Zone 2/22***
RF x10 -Ex /AD	13,56 MHz RFID Read/Write Module (ISO 15693)
RF x10 -Ex /AM	13,56 MHz RFID Read/Write Module
RF x11 -Ex /AC	125 kHz RFID Reader
RF x11 -Ex /FE	125 kHz RFID Reader
RF x11 -Ex /AT	134 kHz RFID Reader
BC x10 -Ex	2D Barcode Imager Module
MCT202	Honeywell HART Modem
Pistolgrip	HG x10 -Ex
Handgrip	HG x11 -Ex
Leathercases	

4.3 Ex-PDA i.roc 527 -Ex	***FM Div 2***
RF x10 -Ex /AD	13,56 MHz RFID Read/Write Module (ISO 15693)
RF x11 -Ex /AC	125 kHz RFID Reader
RF x11 -Ex /FE	125 kHz RFID Reader
RF x11 -Ex /AT	134 kHz RFID Reader
BC x10 -Ex	2D Barcode Imager Module
MCT202	Honeywell HART Modem
Pistolgrip	HG x10 -Ex
Handgrip	HG x11 -Ex
Leathercases	

4.4 Ex-PDA i.roc 620 -Ex ATEX Zone 1/21

RF x10 -Ex /AD	13,56 MHz RFID Read/Write Module (ISO 15693)
RF x10 -Ex /AM	13,56 MHz RFID Read/Write Module
RF x11 -Ex /AC	125 kHz RFID Reader
RF x11 -Ex /FE	125 kHz RFID Reader
RF x11 -Ex /AT	134 kHz RFID Reader
BC x10 -Ex	2D Barcode Imager Module
MCT202	Honeywell HART Modem
Pistolgrip	HG x10 -Ex
Handgrip	HG x11 -Ex
Leathercases	

4.5 Ex-PDA i.roc 623 -Ex Mining

RF x10 -Ex /AD	13,56 MHz RFID Read/Write Module (ISO 15693)
RF x10 -Ex /AM	13,56 MHz RFID Read/Write Module
RF x11 -Ex /AC	125 kHz RFID Reader
RF x11 -Ex /FE	125 kHz RFID Reader
RF x11 -Ex /AT	134 kHz RFID Reader
BC x10 -Ex	2D Barcode Imager Module
Pistolgrip	HG x10 -Ex
Handgrip	HG x11 -Ex
Leathercases	

4.6 Ex-PDA i.roc 627 -Ex FM Div 1

RF x10 -Ex /AD	13,56 MHz RFID Read/Write Module (ISO 15693)
RF x11 -Ex /AC	125 kHz RFID Reader
RF x11 -Ex /FE	125 kHz RFID Reader
RF x11 -Ex /AT	134 kHz RFID Reader
BC x10 -Ex	2D Barcode Imager Module
MCT202	Honeywell HART Modem
Pistolgrip	HG x10 -Ex
Handgrip	HG x11 -Ex
Leathercases	

5. Information on wireless devices

In some environments, the use of wireless devices may be prohibited or restricted. This can be the case on aeroplanes, in hospitals, near explosive materials or under other dangerous conditions. If you are not certain what rules apply for using the device, ask permission before switching it on.

6. Note for the European Union

The WLAN function of this product in accordance with IEEE 802.11b and the Bluetooth function can be used in the following EU and EFTA countries: Belgium, Denmark, Germany, Estonia, Finland, Greece, United Kingdom, Ireland, Iceland, Italy, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Austria, Portugal, Sweden, Switzerland, Slovenia, Spain and Hungary. In France, only

certain channels are available for the WLAN operation of this product under IEEE 802.11b (only channels 10, 11, 12 and 13). Special rules of the Autorité de régulation des télécommunications (ART), which permit the use of other channels, apply for hotspots. You can get information about local rules and authorisation from ART (http://www.art-telecom.fr)

7. Notes for the U.S.A.

High-frequency radiation can create a load. This device's radiation emission is below the FCC limits for high-frequency radiation. Still, the device should be operated so that contact with people is avoided as much as possible during normal operation. People should not stay near the antennas during normal operation to avoid the possibility that the FCC limits for high-frequency radiation may be exceeded.

8. Notes for Canada

The following conditions for operating this device should be observed: (1) This device must not generate interference and must (2) absorb interference received, even if this can lead to malfunctions in the device's operation. If the term „IC:" appears before the licensing registration number, that means that the requirements under Industry Canada Standard have been met.

9. Note for flights

Permission to use electronic devices in aeroplanes is up to the respective airline.

10. Battery care

- The battery should be charged completely before the first use.
- Note that the maximum capacity of the battery is achieved only after about six charging and discharging cycles.
- Since the performance of batteries declines over time, they should be completely discharged occasionally to maintain their full capacity. When doing this, leave the unit turned on until it turns itself off. Then completely charge the battery outside the Ex-area.
- Before any longer periods of non-use the battery must be fully charged and recharged regularly (every 3 months).

11. Repairs

Repair work is subject to the nationally valid regulations and directives. We therefore recommend that such work be performed by ecom instruments GmbH, as all repairs must be examined to ensure functional safety.

12. Cleaning, maintenance and storage

- Only use a suitable cloth or sponge to clean the unit. Do not use solvents or abrasive cleaning agents to clean the unit.
- We recommended having the function and the accuracy of the unit checked by ecom instruments GmbH every two years.
- The storage temperature must remain within the specified limits!

13. Disposal

Electrical devices and „historic“ electrical devices of ecom instruments GmbH are transported to us for the obligatory disposal at our cost and are disposed free of charge in accordance with the European Directive 2002/96/EC and the German Electrical and Electronic Equipment Law of 16 March 2005. The costs of transporting the equipment to ecom instruments GmbH are to be borne by the sender.

14. Warranty and liability

Under the general terms and conditions of business, ecom instruments GmbH offers a 2-year warranty for function and materials on this product under the specified operating and maintenance conditions. Not covered are all wearing parts (e.g. batteries, displays, touch screens, etc). We give a manufacturer‘s warranty of six months especially for the supplied Ex-batteries.

This warranty does not extend to products that have been used improperly, altered, neglected, damaged by accident or subjected to abnormal operating conditions or improper handling.

In the event of a warranty claim, the faulty device should be sent in. We reserve the right to re-calibrate, repair or replace the device.

The above warranty terms represent the sole rights of the purchaser to compensation and apply exclusively and in place of all other contractual or statutory warranty obligations. ecom instruments GmbH does not accept liability for specific, direct, indirect, incidental or consequential damages or losses, including the loss of data, regardless of whether they are caused by breach of warranty, lawful or unlawful actions, actions in good faith or other actions.

If in certain countries the restriction of statutory warranty and the exclusion or restriction of incidental or consequential damages is unlawful, then it may be possible that the above restrictions and exclusions do not apply for all purchasers. If any clause in these warranty terms is found to be invalid or unenforceable by a competent court, then such a judgement shall not affect the validity or enforceability of any other clause contained in these warranty terms.

15. EC-Type Examination Certificate i.roc 620 -Ex

Ex-PDA i.roc 620 -Ex ATEX Zone 1/21

Prüf- und Zertifizierungsstelle

ZELM Ex

(1) EC-Type Examination Certificate

(2) Equipment and Protected Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-Type Examination Certificate Number

ZELM 04 ATEX 0200

(4) Unit **Explosion-protected PDA Type i.roc 6* -Ex / Type i.roc 6*N -Ex**

(5) Manufacturer: **ecom Instruments GmbH**

(6) Address: **D-97959 Assamstadt**

(7) The design of this equipment and its various approved embodiments are defined in the attachment to this type examination certificate.

(8) The Prüf- und Zertifizierungsstelle ZELM, notified body no. 0820 in accordance with Article 9 of the EC Council Directive dated March 23, 1994 (94/9/EC), certifies that this equipment has been found to conform with the essential health and safety requirements for the design and construction of equipment and protected systems for proper intended use in potentially explosive areas in accordance with Appendix II of the directive.

The results of the test are documented in the confidential test report no. ZELM Ex 0160412277.

(9) The essential health and safety requirements are met by virtue of conformity with

EN 50 014: 1997+A1+A2 **EN 50 020: 2002** **EN 50 281-1-1:1998**

(10) If the certification number is followed by an "X", then this indicates that special conditions exist for the safe operation of the equipment. These special conditions are contained in the attachment to this certificate.

(11) This EC-type examination certificate only refers to the design, checking and testing of the specified unit or protected system in accordance with directive 94/9/EC. Further requirements contained in this directive may apply with regard to the manufacturing process and the supply of the equipment or protected system. Such requirements are not covered by this certification.

(12) The equipment must be labelled with the following information:

II 2 G EEx ia IIC T4
II 2 D T 95°C IP65

Zertifizierungsstelle **ZELM Ex**

Signature

Dipl.-Ing. Harald Zelm

Prüf- und Zertifizierungsstelle

ZELM Ex

(13) # Attachment

(14) **EC-Type Examination Certificate ZELM 04 ATEX 0200**

(15) Description of the unit

The explosion-protected PDA (Personal Digital Assistant) is used for mobile data management in potentially explosive atmospheres. Other accessories such as additional memory can be integrated into the unit. The asterisk (*) in the type designation is replaced with a two-digit number. This number is used to specify unit models that do not represent a safety-relevant variation of the device. Data communication with other devices is performed exclusively by means of a wireless connection via integrated Bluetooth / WLAN and IrDa interfaces.
In potentially explosive atmospheres, the approved unit may be operated for the purpose of exchanging data only in conjunction with other devices.

The unit is fitted with a power supply in the form of an integral rechargeable battery. This rechargeable battery is not designed to be replaced.

In potentially explosive atmospheres, the explosion-protected PDA Type i.roc 6*N -Ex may only be cleaned using a damp cloth. The housing of the explosion-protected PDA Type i.roc 6* -Ex is electrostatically conductive. Consequently, the usually required warnings are not necessary in this instance.

The permitted ambient temperature is -10 °C to + 50 °C.

Electrical Data Power

supply circuit	from an internal rechargeable battery, EEx ia IIC The internal circuits are intrinsically safe.
WLAN output	Tx power: 15 dBm (31.6 mW)
Bluetooth output	Tx power: 1 mW (Class II)

Note:

The operating instructions must be followed. In particular, the following instructions are to be adhered to:
- The unit must not be opened within the potentially explosive area.
- Charging must be performed outside the potentially explosive area using the designated charger Type LG x10.
- In potentially explosive atmospheres, the explosion-protected PDA Type i.roc 6*N -Ex may only be cleaned using a damp cloth. All instructions printed on the device must be adhered to.

(16) Test report no.

ZELM Ex 0160412277

(17) Special conditions

Not applicable

(18) Essential health and safety requirements

Satisfied by compliance with the relevant standards

Zertifizierungsstelle **ZELM Ex** Braunschweig, 29.03.2004

Signature

Dipl.-Ing. Harald Zelm

Prüf- und Zertifizierungsstelle
ZELM Ex

1. Addition

(Addition in accordance with EC Directive 94/9 Appendix III Item 6)

for EC-Type Examination Certificate

ZELM 04 ATEX 0200

Equipment:	**Explosion-protected PDA type i.roc 6*-Ex and/or type i.roc 6*N- Ex**
Manufacturer:	**ecom Instruments GmbH**
Address:	**D-97959 Assamstadt**

Description of the addition

The first addition to the EC-type examination certificate relates to the internal circuit layout and the designation.

The technical data and the information provided on the EC-type examination certificate remain unchanged.

The explosion-protected PDA type i.roc 6* -Ex and/or type i.roc 6*N -Ex may now be manufactured subject to compliance with this modification.

The equipment must now be labelled with the following information:

Ex **II 2 G EEx ia IIC T4**
II 2 D T 99°C IP65

Test report no.

ZELM Ex 1080412323

Special conditions

Not applicable

Essential health and safety requirements

The essential health and safety requirements are met by virtue of conformity with the standards listed in the EC-type examination certificate.

Zertifizierungsstelle **ZELM Ex** Braunschweig, October 25, 2003

Dipl.-Ing. Harald Zelm

Prüf- und Zertifizierungsstelle

ZELM Ex

2nd addition

(Addition in accordance with EC Directive 94/9 Appendix III Item 6)

to EC-Type Examination Certificate

ZELM 04 ATEX 0200

Equipment:	**Explosion-protected PDA type i.roc 6*-Ex and/or type i.roc 6*N-Ex**
Manufacturer:	**ecom Instruments GmbH**
Address:	**D-97959 Assamstadt**

Description of the addition

This 2nd addition to the EC-type examination certificate relates to the integration of an LED scanner.

The technical data and designation as well as the information provided on the EC-type examination certificate remain unchanged.

The explosion-protected PDA type i.roc 6* -Ex and/or type i.roc 6*N -Ex may now be manufactured subject to compliance with this modification.

Test report no.: ZELM Ex

1110412328

Special conditions

Not applicable

Essential health and safety requirements

The essential health and safety requirements are met by virtue of conformity with the standards listed in the EC-type examination certificate.

Zertifizierungsstelle ZELM Ex **Braunschweig, 15.12.2004**

Prüf- und Zertifizierungsstelle

ZELM Ex

3rd Addition

(Addition in accordance with EC Directive 94/9 Appendix III Item 6)

to the EC-Type Examination

Certificate ZELM 04 ATEX 0200

Equipment:	**Explosion-protected PDA type i.roc 6*-Ex and/or i.roc 6*N-Ex**
Manufacturer:	**ecom instruments GmbH**
Address:	**Industriestr. 2 D-97959 Assamstadt**

Description of the addition

The third addition to the EC-type examination certificate relates specifically to the internal layout without significant changes to the printed circuit board layout. In addition, the equipment may be alternatively fitted with an additional RFID reader and a pistol grip (with button) or with a handle (corresponds to pistol grip, however, without button).

The ignition protection type/designation is as follows: II 2G EEx ia IIC T4
II 2D T99°C IP 65

The technical data and designation as well as the information provided on the EC-type examination certificate remain unchanged.

Test report no. ZELM Ex

0970512407

Special conditions

Not applicable

Essential health and safety requirements

The essential health and safety requirements are met by virtue of conformity with the standards listed in the EC-type examination certificate.

ZELM certifying body

Braunschweig, July 15, 2005

ZELM Ex testing and certifying body • Siekgraben 56 • D-38124 Braunschweig Germany

Prüf- und Zertifizierungsstelle

ZELM Ex

Fourth Addition

(Addition in accordance with EC Directive 94/9 Appendix III Item 6)

to the EC-Type Examination

Certificate ZELM 04 ATEX 0200

Equipment:	**Explosion-protected PDA type i.roc 6*-Ex or i.roc 6*N-Ex**
Manufacturer:	**ecom instruments GmbH**
Address:	**Industriestr. 2, D-97959 Assamstadt**

Description of the addition

The fourth addition to the EC-type examination certificate relates to expanding the explosion-protected PDA by the type i.roc 62. -Ex, which differs from the previous model particularly in its internal layout. This device can be equipped with the previously approved accessories and also, as an alternative, with an additional HART modem.

These possible, approved accessories are listed in the safety instructions.

The designation/ignition protection type for this version is as follows:

II (1)2 G EEx ia IIC T4
II (1)2 D T99°C IP 65

This version of the explosion-protected PDA type i.roc 62. -Ex may also be used with an additional HART modem as an alternative. Measurements on intrinsically safe HART circuits conducted in areas that require Category 1 are approved subject to compliance with the following connection values.

Electrical data:

HART modem

In ignition protection type: intrinsically safe, EEx ia IIC

Maximum values: U_o= 1.4 V; P_o= 0 W; I_o = 0 mA

maximum permissible external capacitance C_o=1000 µF

maximum permissible external inductance L_o = 1000 mH

or

for the connection of certified intrinsically safe circuits with the following maximum values:

U_i = 30 V
I_i = 333.3 mA
P_i = 1 W

The effective internal inductance L_i and capacitance C_i are negligibly small or measurements are not on intrinsically safe circuits

Measurement inputs

Maximum values U_m = 30 VDC
I = 333.3 mA

All other electrical data and the type of designation as well as the information provided on the EC-type examination certificate remain unchanged.

Prüf- und Zertifizierungsstelle

ZELM Ex

Fourth Addition to the EC-type examination certificate ZELM 04 ATEX0200

Test report no.

ZELM Ex 0340612459

Special conditions

Not applicable

Essential health and safety requirements

The essential health and safety requirements are met by virtue of conformity with the standards listed in the EC-type examination certificate.

Zertifizierungsstelle **ZELM** ex

Braunschweig, July 12, 2006

Dipl.-Ing. Harald Zelm

16. Declaration Statement i.roc 520 -Ex

Ex-PDA i.roc 520 -Ex ATEX Zone 2/22

Prüf- und Zertifizierungsstelle

ZELM Ex

(1) # Conformity Statement

(2) Equipment and Protected Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) Test Certificate Number

ZELM 04 ATEX 3201

(4) Equipment: **Explosion-protected PDA type i.roc 5*-Ex and/or type i.roc 5*IM-Ex**

(5) Manufacturer: **ecom Instruments GmbH**

(6) Address: **D-97959 Assamstadt**

(7) The design of this equipment and its various approved embodiments are defined in the attachment to this test certificate.

(8) The Prüf- und Zertifizierungsstelle ZELM, notified body no. 0820 in accordance with Article 9 of the EC Council Directive dated March 23, 1994 (94/9/EC), certifies that this equipment has been found to conform with the essential health and safety requirements for the design and construction of equipment and protected systems for proper intended use in potentially explosive areas in accordance with Appendix II of the directive.

The results of the test are documented in the confidential test report no. ZELM Ex 0170412349.

(9) The essential health and safety requirements are met by virtue of conformity with

EN 50 014: 1997+A1+A2 **EN 50 021: 1999** **EN 50 281-1-1: 1998**

(10) If the certification number is followed by an "X", then this indicates that special conditions exist for the safe operation of the equipment. These special conditions are contained in the attachment to this certificate.

(11) This Conformity Statement refers only to the design, checking and testing of the specified unit or protected system in accordance with directive 94/9/EC. Further requirements contained in this directive may apply with regard to the manufacturing process and the supply of the equipment or protected system. Such requirements are not covered by this Conformity Statement.

(12) The equipment must be labelled with the following information:

Ex **II 3 G EEx nL IIC T4**
II 3 D T 55°C IP65

Zertifizierungsstelle ZELM Ex **Braunschweig, 20.12.2004**

Prüf- und Zertifizierungsstelle
ZELM Ex

(13) **Attachment**

(14) **Conformity Statement ZELM 04 ATEX 3201**

(15) Description of the equipment

The explosion-protected PDA (Personal Digital Assistant) is used for mobile data management in potentially explosive areas. Other approved accessories, e.g. additional memory, can be integrated into the equipment. The "*" in the type designation is replaced by a two-digit number. This number does not indicate safety-relevant variants of the equipment. All data communication with other equipment within the potentially-explosive area is wireless via integrated Bluetooth / WLAN and IrDA interfaces and only in combination with other approved equipment.

The equipment is fitted with a power supply in the form of an integral rechargeable battery. This rechargeable battery is not designed to be replaced.

In potentially explosive atmospheres, the explosion-protected PDA, type i.roc 5*N-Ex may only be cleaned using a damp cloth. The explosion-protected PDA, typ i.roc 5* -Ex housing is electrostatically conductive. No warning sign is therefore required. The permitted ambient temperature is -10 °C to + 50 °C.

Electrical data Power

supply circuit	From an internal, rechargeable battery The internal circuits have limited power.
WLAN port	Output: 15dBm (31.6mW)
Bluetooth port	Output: 1 mW (Class II)

Note:

The operating instructions must be observed, paying particular attention to the following:
- The equipment must not be opened within the potentially explosive area.
- The battery must be charged outside the potentially explosive area with the designated charger of type LG x10.
- In potentially explosive atmospheres, the explosion-protected PDA, type i.roc 5*N-Ex may only be cleaned using a damp cloth. The respective label must be observed.

(16) Test report no.

ZELM Ex 0170412349

(17) Special conditions

Not applicable

(18) Essential health and safety requirements

Met by standards

Zertifizierungsstelle ZELM Ex

Braunschweig, 20.12.2004

Test and Certification Body

ZELM Ex

First supplement
to the conformity statement
ZELM 04 ATEX 3201

Device: **Explosion-proof PDA, Type i.roc 5* -Ex and Type i.roc 5*N –Ex**
Manufacturer: **ecom Instruments GmbH**
Address: **D-97959 Assamsstadt**

Description of the supplement
The first supplement to the conformity statement concerns the extension of the type series of explosion-proof PDAs, i.roc 5*-Ex and i.roc 5*N-Ex, by additional types.

The additional types have been designated:

Explosion-proof PDA, i.roc 52.-Ex

The change particularly affects the internal design, the higher energy rechargeable battery and new component groups with corresponding software as well as the designation.
The designation of the explosion-proof PDA, i.roc 52.-Ex is:

Ex II 3 G EEx nL IIC TC
II 3 T 99°C IP65.

The designation for the previous types remains unchanged.

The housing of the explosion-proof PDA, i.roc 52.-Ex, is electro-statically conducting. The corresponding warning information is therefore not required.
The technical data, the permissible range of ambient temperatures and other designations as well as the information provided in the conformity statement remain unchanged and also apply to the new additional types.

Test Report No.
ZELM Ex 0180612452

Fundamental safety and health requirements
The fundamental safety and health requirements are fulfilled through compliance with

EN 60079-0 : 2004 **EN 50 021: 1999** **EN 50 281-1-1 : space 1998**
EN 60079-15 : 2003 **EN 61241-1 : 2004**

Certification Body ZELM Ex Braunschweig, 07.04.2006

((Signature, stamp: Test and Certification Body ZELM Ex))
Dipl.-Ing. Harald Zelm Page 1 of 1

Conformity statements without signature and without stamp are not valid. This conformity statement may only be distributed without change. Excerpts or changes must be approved by the Test and Certification Body ZELM Ex.

Test and Certification Body ZELM Ex * Siekgraben 56 * D-38124 Braunschweig

17. Certificat of Compliance

FM Approvals
Member of the FM Global Group

FM Approvals
1151 Boston-Providence Turnpike
P.O. Box 9102 Norwood, MA 02062 USA
T: **781 762 4300** F: 781 762 9375 www.fmapprovals.com

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

Ex-Cam 01. Digital Camera.

NI / I / 2 / ABCD / T6

i.roc 5ab-Ex. PDA.

NI / I / 2 / ABCD / T6 Ta = 50 °C

a = Option: 10, 11, 12, 17, 18, 19, 27
b = Enclosure: blank, N

i.roc 6ab-Ex. PDA

IS / I / 1 / ABCD / T4 Ta = 50 °C
NI / I / 2 / ABCD / T6 Ta = 50 °C

a = Option Type: 10, 11, 12, 17, 18, 19
b = Enclosure: blank, N

Equipment Ratings:

The i.roc 500-Ex and Ex-CAM 01 Digital Camera are suitable for Class I, Division 2, Groups A, B, C, and D and the i.roc 600-Ex PDA is intrinsically safe for Class I, Division 1, Groups A, B, C, and D hazardous (classified) locations.

FM Approved for:

ecom instruments GmbH
Assamstadt Germany

FM Approvals

Member of the FM Global Group

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

Class 3600	1998
Class 3610	1999
Class 3611	1999

Original Project ID: 3020762 Approval Granted: August 23, 2004

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3022544	January 6, 2005		
3025580	March 15, 2006		

FM Approvals LLC

George A. Smith
Assistant Vice President

3/15/06
Date

18. Control Drawing

FM Approvals℠
Member of the FM Global Group

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

Class 3600	1998
Class 3610	1999
Class 3611	1999

Original Project ID: 3020762 Approval Granted: August 23, 2004

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3022544	January 6, 2005		
3025580	March 15, 2006		

FM Approvals LLC

George A. Smith
Assistant Vice President

3/15/06
Date

19. Additional safety instructions for mining operations

19.1 Note

These safety instructions contain information that must be followed to ensure safe and reliable operation of the ***i.roc*** 623 -Ex with mining approval.

Please take the time to carefully read through the enclosed operating manual and the safety instructions before use!

In the event of any doubt or discrepancies (e.g. due to errors in translation), the German version of the operating manual shall govern.

19.2 Safety regulations

Persons using the mining-approved ***i.roc*** 623 -Ex must observe the standard safety regulations to prevent incorrect operation or use of the device. When using the mining version, the following must be observed:

- Only the HDC 9 headset with modified connector may be used on the headset socket of devices that are additionally fitted with the HS x10 headset connection in the device head.
- In the presence of firedamp, the ***i.roc*** 623 -Ex must be taken out of operation.

19.3 Ex-data

⟨Ex⟩ I M1 EEx ia I

EC-type examination certificate no.: IBExU 04 ATEX 1200

19.4 EC Declaration of Conformity

Ex-PDA i.roc 623 -Ex Mining

IBExU Institut für Sicherheitstechnik GmbH
To the Freiberg University College of Mining

[1] **EC-TYPE EXAMINATION CERTIFICATE**
in accordance with 94/9/EC Directive, Appendix III

[2] Equipment and Protected Systems Intended for Use in Potentially Explosive Atmospheres - **94/9/EC Directive**

[3] EC-Type Examination Certificate Number: **IBExU04ATEX1200**

[4] Equipment: PDA type i.roc 6*-Ex and/or type i.roc 6*N-Ex

[5] Manufacturer: ecom Instruments GmbH

[6] Address: Industriestr. 2 D-97959 Assamstadt

[7] The design of the device indicated in [4] and its various approved embodiments are defined in the appendix to this type examination certificate.

[8] IBExU Institut für Sicherheitstechnik GmbH, CENTRE No. 0637 in accordance with Article 9 of 94/9/EC Directive issued by the European Parliament and the Council on March 23, 1994, hereby certifies that this device satisfies the fundamental health and safety requirements for design and construction of the device specified in Appendix II of the Directive for its designated use in potentially explosive atmospheres. The test results are set out in Test Report IB-04-3-232 dated 24.09.2004.

[9] The fundamental health and safety requirements are satisfied through compliance with EN 50014:1997+A1+A2, EN 50020:2002 and EN 50303:2000.

[10] If the certification number is followed by an "X", this indicates that special conditions exist for safe operation of the equipment. These special conditions are contained in the attachment to this EC Type Examination Certificate under [17].

[11] This EC Type Examination Certificate refers only to the design and construction of the specified device. Further requirements contained in this directive apply for the manufacture and marketing of this device.

[12] The device indicated under [4] must be labelled with the following information:

I M1 EEx ia I
$-10°C \leq T_a \leq +50°C$

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7 – D-09599 Freiberg
Tel.: +49-3731 3805-0 - Fax: +49-3731 23650

Certification centre for explosion protection

Freiberg, 27.09.2004

For and on behalf of

(Dr. Lösch)

- Seal -
(Code 0637)

Appendix

IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg

[1] **2nd addition to**
EC TYPE EXAMINATION CERTIFICATE IBExU04ATEX1200
in accordance with Directive 94/9/EC, Appendix III

[2]	Equipment:	PDA Type i.roc 6*-Ex
[3]	Manufacturer:	ecom Instruments GmbH
[4]	Address:	Industriestraße 2 D-97959 Assamstadt

[5] **Addition/modification**

The equipment specified in [2] can also be manufactured with the documented modifications. They relate to the scanner function and internal component modifications. The electrical data remain unchanged. The safety instructions must be followed.

[6] **Test result**

Proof of explosion protection for the additions/modifications is set forth in detail in Test Report IB-05-3-020 as of January 18, 2005. The documentation is part of the Test Report. The equipment meets the requirements for ignition protection in explosion-protected electrical equipment for Group 1 and Category M1. The unchanged designation is as follows:

I M1 EEx ia I
-10 °C ≤ T_a ≤ +50 °C

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7 - D-09599 Freiberg
Tel.: +49 3731 3805.0 - Fax: +49 3731 23650.

Freiberg, January 20, 2005

Certification centre for explosion protection

For and on behalf of

Certificates without signature and stamp are not valid. Certificates may only be distributed in their original versions.

- Seal -(Code 0637)

IBExU Institut für Sicherheitstechnik GmbH
To the Freiberg University College of Mining

[1] **1. Addition to the**
EC-TYPE EXAMINATION CERTIFICATE IBExU04ATEX1200
in accordance with 94/9/EC Directive, Appendix III

[2]	Equipment:	PDA Type i.roc 6*-Ex and/or type i.roc 6*N-Ex
[3]	Manufacturer:	ecom Instruments GmbH
[4]	Address:	Industriestraße 2 D-97959 Assamstadt

[5] **Addition/modification**

The equipment specified in [2] can also be manufactured with the documented modifications. They relate to the internal circuit layout. The electrical data remain unchanged. The safety instructions must be followed.

[6] **Test result**

Proof of explosion protection for the additions/modifications is set forth in detail in Test Report IB-04-3-353 as of November 26, 2004. The documentation is part of the Test Report. The equipment meets the requirements for ignition protection in explosion-protected electrical equipment for Group 1 and Category M1. The unchanged designation is as follows:

⟨Ex⟩ I M1 EEx ia I
-10 °C ≤ T_a ≤ 50 °C

IBExU Institut für Sicherheitstechnik GmbH
Fuchsm hlenweg 7 - D-09599 Freiberg
Phone: +49 3731 3805.0 - Fax: +49 3731 23650

Freiberg, November 29, 2004

Zertifizierungsstelle Explosionsschutz

For and on behalf of

- Stamp —

(Code 0637)

(Dr. Lösch)

Certificates without signature and stamp are not valid. Certificates may only be distributed in their original versions.

IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg

[1] **2nd addition to**
EC TYPE EXAMINATION CERTIFICATE IBExU04ATEX1200
in accordance with Directive 94/9/EC, Appendix III

[2]	Equipment:	PDA Type i.roc 6*-Ex
[3]	Manufacturer:	ecom Instruments GmbH
[4]	Address:	Industriestraße 2 D-97959 Assamstadt

[5] **Addition/modification**

The equipment specified in [2] can also be manufactured with the documented modifications. They relate to the scanner function and internal component modifications. The electrical data remain unchanged. The safety instructions must be followed.

[6] **Test result**

Proof of explosion protection for the additions/modifications is set forth in detail in Test Report IB-05-3-020 as of January 18, 2005. The documentation is part of the Test Report. The equipment meets the requirements for ignition protection in explosion-protected electrical equipment for Group 1 and Category M1. The unchanged designation is as follows:

I M1 EEx ia I
-10 °C ≤ T_a ≤ +50 °C

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7 - D-09599 Freiberg
Tel.: +49 3731 3805.0 - Fax: +49 3731 23650.

Freiberg, January 20, 2005

Certification centre for explosion protection

For and on behalf of

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- Seal -(Code 0637)

Communication
Torches/Flashlights
Mobile Computing
Measuring & Calibration

WEEE-Reg.-Nr. DE 934 99306
3500 AL05 A00 05/06 Subject to change without notice!

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