i.roc x10 -Ex

lightweight, ergonomic and robust· optimized for high productivity!

The ecom i.roc x10 -Ex is a high performance industrial PDA based on the Windows Mobile™ Operating System with compact external dimensions, an integrated WLAN, USB, Bluetooth™ and an IrDA port.

Meets the diverse needs and requirements of industry operating both inside and outside of Ex-hazardous areas, the ***i.roc*** is available in three different versions along with a comprehensive range of Ex-certifications.

- Ergonomic design facilitates fatigue-free operation during continuous use.
- High-resolution color display can be read under even the most unfavorable light conditions.
- Protection from static electricity, water and dust; shockproof housing (non-corroding)

ecom instruments

Technical description

Extended front housing
for options such as Barcode-Imager
BC x10-Ex and RFID-Module RF x10 -Ex

Dust- and water-tight,
anti-static, conductive
housing, IP 65

LED indicators for
charging and
connectivity status

3.5″ TFT display with
16K color depth,
protected by a
Makrolon™ panel

Optional hand loop - for
safe and secure handling
in all weather conditions

Standard keyboard with
5-way navigation field
and 5 programmable keys

Microphone and loudspeaker

Standard front housing
compact, lightweight,
ergonomic

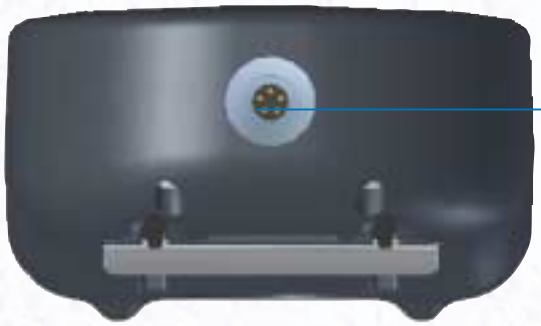
Attachment points for
optional holders

Integrated Bluetooth 1.1
Class 2 interface

Integrated WLAN card
IEEE 802.11b compatible

Infrared port
IrDA 1.1 (115.2 BK/s)

Convenient yet secure - 2 slots
for stylus pens



Battery charging socket with
integrated USB port connection

Details

Barcode Imager BC x10 -Ex

The automatic recording of data and its implementation to a wide range of concepts is of increasing importance. It has become essential to store as much data as possible in as small a space as possible. Furthermore, it must also be possible to read and process the data reliably.

The late 1980s marked the beginning of some new approaches to barcodes. The first stacked barcodes were developed, followed in the 90s by 2D or matrix codes.
Today, according to conservative estimates there are over 30 different symbologies available on the market. The optional integrated CMOS Barcode Imager BC x10 expands the functions of the ***i.roc*** x10 to include reading of all common barcodes – 1D linear codes, 2D stacked/matrix codes, OCR fonts and postal codes. This module is equipped with an omni-directional (360°) scan area and a two-color aimer to enable masking of the scan area. It is also possible to take 640x320-pixel black-and-white photographs.

Technical data:

Barcodes which can be read:
2D: PDF417, MicroPDF417, MaxiCode, Data Matrix, QR Code, Aztec, Aztec Mesas, Code 49, EANUCC Composite, Snowflake*, Dataglyphs*
Linear: Code 39, Code 128, Codabar, UPC, EAN, Interleaved 2 of 5, Reduced Space Symbology, Code 93, Codablock F, BC412*
Postal: Postnet, Planet Code, British, Canadian, Japanese, KIX (Netherlands)
OCR Fonts: OCR-A and OCR-B (*can be enabled for licensed customers)

Focal point: 7″ (17.8cm) from lens plate (nominal)

Working range:

	8 mil Linear (0.0079″)	10 mil PDF417 (0.01″)	13 mil UPC (0.013″)	15 mil PDF417 (0.015″)	15 mil Data Matrix (0.015″)	35 mil MaxiCode (0.035″)
Near:	(3.5″)	(3.11″)	(2.5″)	(3.5″)	(3.7″)	(2.00″)
Far:	(7.6″)	(9.02″)	(12.5″)	(11.18″)	(6.5″)	(13″)

Rotational sensitivity: 360°
Viewing angle: ±40°
Ambient light: 535 to 100,000 lux (full sunlight)

Keyboard

Even more than with other devices, industrial PDAs need to have a reliable, fast and easy-to-use method for inputting data. In response to these requirements, ***ecom instruments*** has decided for a new approach – a virtual fullscreen keyboard.

So problems with worn and dirty keypads, ingress of dust, contaminants and a lack of keypad illumination can now be a thing of the past.

- Optimally designed for data input while wearing gloves
- Selection of three different layouts (numeric, alpha, special)
- Quick toggle key

RFID-Module RF x10 -Ex

Our robust RFID read/write systems have been specially developed for use in production, logistics and in commercial contexts. They are flexible in operation and provide quick, reliable identification of objects at various distances. The user memory has a depth of up to 992 bytes, depending on the transponder type, making it possible for the operator to store production-related information on the transponder, even without a connection to a database (offline operation).

The RFID-Module is the ideal solution anywhere mobile data storage is required, e.g. in object identification, servicing, temporary storage or warehouse management.

- Can be integrated into existing systems
- Relatively long reading range
- ISO 15693 compatible
- Collision avoidance, recording from more than one transponder in a field
- Software can be updated

Technical data:

Operating frequency:	13.56 MHz
Read/write range:	up to 3.1˝ (80mm), depending on the transponder type and environment
Data transmission speed:	approx. 26 KBit/s
Writing to transponder:	< 50 ms per block
Reading from transponder:	< 50 ms per block
Transponder types:	ISO 15693, Tag-It, I-CODE, EM, SLI, HFI, LRI and Infineon

Accessories

An extensive range of accessories are available (e.g. leather carrying case, hand loop, USB data transmission set, holders and additional batteries for use in cars, charging cable). This means that you can be assured to find a suitable solution, no matter what the application. Therefore, it is possible to meet the needs and demands of most requirements. However, if there are particular requirements needed - please contact us. We will be glad to assist you in developing individual solutions.

Leather case with belt holder and carrying strap.

Technical data

Housing	
Protection rating:	IP 65 (immersion for brief periods)
Housing:	Anti-static, non-corroding housing
Shock resistance:	4 ft (1.2 m) on to concrete
Dimensions	
L x W x H:	7˝x3.3˝x1.5˝ (178 x 85 x 39 mm)
	8.8˝x3.5˝x1.9˝ (224 x 89 x 49 mm) (Extended upper part of housing)
Storage temperature:	14°F ... 140°F (-10°C ... +60°C)
Temperature range for charging:	32°F ... 113°F (0°C ... +45°C)
Relative humidity	
Operation:	up to 80%
Storage:	up to 80%
Maximum altitude	
Operation:	up to 15,000 ft (4.572 m)
Storage:	up to 40,000 ft (12.192 m)
Processor	
Intel® XScale™-PXA255 400 MHz processor	
Power supply	
Rechargeable lithium-ion battery (1800 mAh)	
Note: the service period of the battery depends on the user's operating habits and the PDA's configuration. The use of internal wireless functions and background lighting reduces this period.	
(Additional batteries are available on request)	
Memory	
RAM 64 MB SDRAM (55 MB available)	
ROM 32 MB Flash-ROM memory	
2.8 MB iPAQ File Store (NVRAM)	
TFT color display	
Resolution:	(W x H) 240 x 320 pixels
Dot pitch:	0.01˝ (0.24 mm)
Screen diagonal:	3.5˝ (89mm)
Display type:	64K (16-bit) transflective color TFT with LED background lighting
Keyboard	
On/Off switch, reset, 5 programmable quick-access keys, 5-way navigation field (customer-specific design possible)	
Stylus	
Quantity of two (included in standard delivery)	
System upgrades	
Integrated SD slot (supports SD/MMC standard, SDIO-ready)	
Note: In the Ex-versions 51x -Ex and 61x -Ex, the customer may not exchange this card. To exchange the card, the device must be sent to the manufacturer. With the 41x version, the card can be exchanged by the user.	
Operating system	
Microsoft Windows™ Mobile 2003 Software for Pocket PC - Premium edition	
Standard applications	
Calendar, contacts, voice recorder, notes, Pocket Word (with character recognition), Pocket Excel, Pocket Internet Explorer, Windows Media Player 9 (MP3, audio and video streaming), calculator, Microsoft Reader (eBooks), File Explorer, pictures, terminal services client, VPN client, infrared Beaming	
Language	
Standard: English (other languages are available on request)	

Hardware and software development	
HTML, XML	
SDK for MS Visual Studio, MS Embedded Visual C++ and Java	
HDK - Hardware Development Kit	
Microsoft .NET Compact Framework	
JVM - Java-Virtual-Machine	
Standard protocol APIs for Windows sockets (Windows CE)	
Infrared specification	
Specification:	IrDA 1.1
Transmission rate:	115.2 KB/s
Bluetooth specification*	
Bluetooth specification:	1.1 compatible (2.4-GHz ISM)
System interface:	High-speed UART processor
User interface:	Bluetooth Manager
Device type:	Class II, 4 dBm transmitter power, typically 16.5 ft (5 m) in an industrial environment
Receiver sensitivity:	-78 dBm
WLAN specification*	
Network standard:	IEEE 802 Part 11b (802.11b)
Frequency band:	2.4000 - 2.4835 GHz (EU)
	2.4465 - 2.4835 GHz (France)
	2.4000 - 2.497 GHz (Japan)
Antenna:	embedded inverted F antenna
WEB Security:	64/128-bit compatible with IEEE 802.11
Network architecture:	Ad-hoc (peer to peer)
	Infrastructure (access points required)
Modulation:	DBPSK, DQPSK, CCK
Receiver packet error rate:	11 Mbps: <-80 dBm, 5.5 Mbps: <-82 dBm,
	2 Mbps: <-86 dBm, 1 Mbps: <-89 dBm
Reception strength:	-10dBm (1/2/5.5/11 Mbps)
Transmitter power (max.):	15 dBm (FCC SARS requirements)
Power management:	On/Off monitoring by operating system
	Connections icon, power save mode
Power consumption:	Send mode: < 380 mA
	Receive mode: < 280 mA
Power safe mode:	802.11 compatible
Protocols:	CSMA/CA (collision avoidance) with ACK,
	TCP/IP, IPX/SPX, UDP
SAR:	1.0 mW/g
Data throughput:	>4.5 Mbps
Range:	262 ft (80 m) in open spaces
Certificates:	Contains all required certificates for the
	countries supported (WECA Wi-Fi)

*Note: a WLAN standard infrastructure, additional Bluetooth-enabled units and a service contract with a wireless carrier may be required for wireless communication to function. A seperate contract is required for GSM Internet use. Your provider can inform you on the availability and extent of the offer. Not all web contents are available. Wireless cards and accessories can be purchased at additional cost.

Certifications

Certification	Model	Memory	Weight	Operating Temperature Range	Part No.
ATEX Zone 1	***i.roc*** 610-Ex		approx. 24.5 oz (750 g)	14°F ... 122°F (-10°C ... +50°C)	AS002766
"	***i.roc*** 611-Ex	+ 256 MB	"	"	AS002761
"	***i.roc*** 612-Ex	+ 512 MB	"	"	AS002762
Mining	***i.roc*** 613-Ex		approx. 24.5 oz (750 g)	14°F ... 122°F (-10°C ... +50°C)	AS002763
"	***i.roc*** 614-Ex	+ 256 MB	"	"	AS002764
"	***i.roc*** 615-Ex	+ 512 MB	"	"	AS002765
FM Class 1/Div. 1	***i.roc*** 617-Ex		approx. 24.5 oz (750 g)	14°F ... 122°F (-10°C ... +50°C)	AS002767
"	***i.roc*** 618-Ex	+ 256 MB	"	"	AS002768
"	***i.roc*** 619-Ex	+ 512 MB	"	"	AS002769
ATEX Zone 2	***i.roc*** 510-Ex		approx. 14.5 oz (410 g)	14°F ... 122°F (-10°C ... +50°C)	AS002776
"	***i.roc*** 511-Ex	+ 256 MB	"	"	AS002771
"	***i.roc*** 512-Ex	+ 512 MB	"	"	AS002772
FM Class 1/Div. 2	***i.roc*** 517-Ex		approx. 14.5 oz (410 g)	14°F ... 122°F (-10°C ... +50°C)	AS002777
"	***i.roc*** 518-Ex	+ 256 MB	"	"	AS002778
"	***i.roc*** 519-Ex	+ 512 MB	"	"	AS002779
Ruggedized	***i.roc*** 410-Ex		approx. 14.5 oz (410 g)	14°F ... 140°F (-10°C ... +60°C)	AS002786
"	***i.roc*** 411-Ex	+ 256 MB	"	"	AS002781
"	***i.roc*** 412-Ex	+ 512 MB	"	"	AS002782

Accessories (suitable for all of the above versions)	
Leather case with belt holder and strap	
A0002777	
Hand loop	A0002778
USB data transmission set	A0002779
Barcode Imager BC x10 -Ex	A0002768
RFID-Module RF x10 -Ex	A0002767

Ruggedized

i.roc 41x:
IP 65
(immersion for brief periods)
Shock resistance 4 ft (1.2 m)

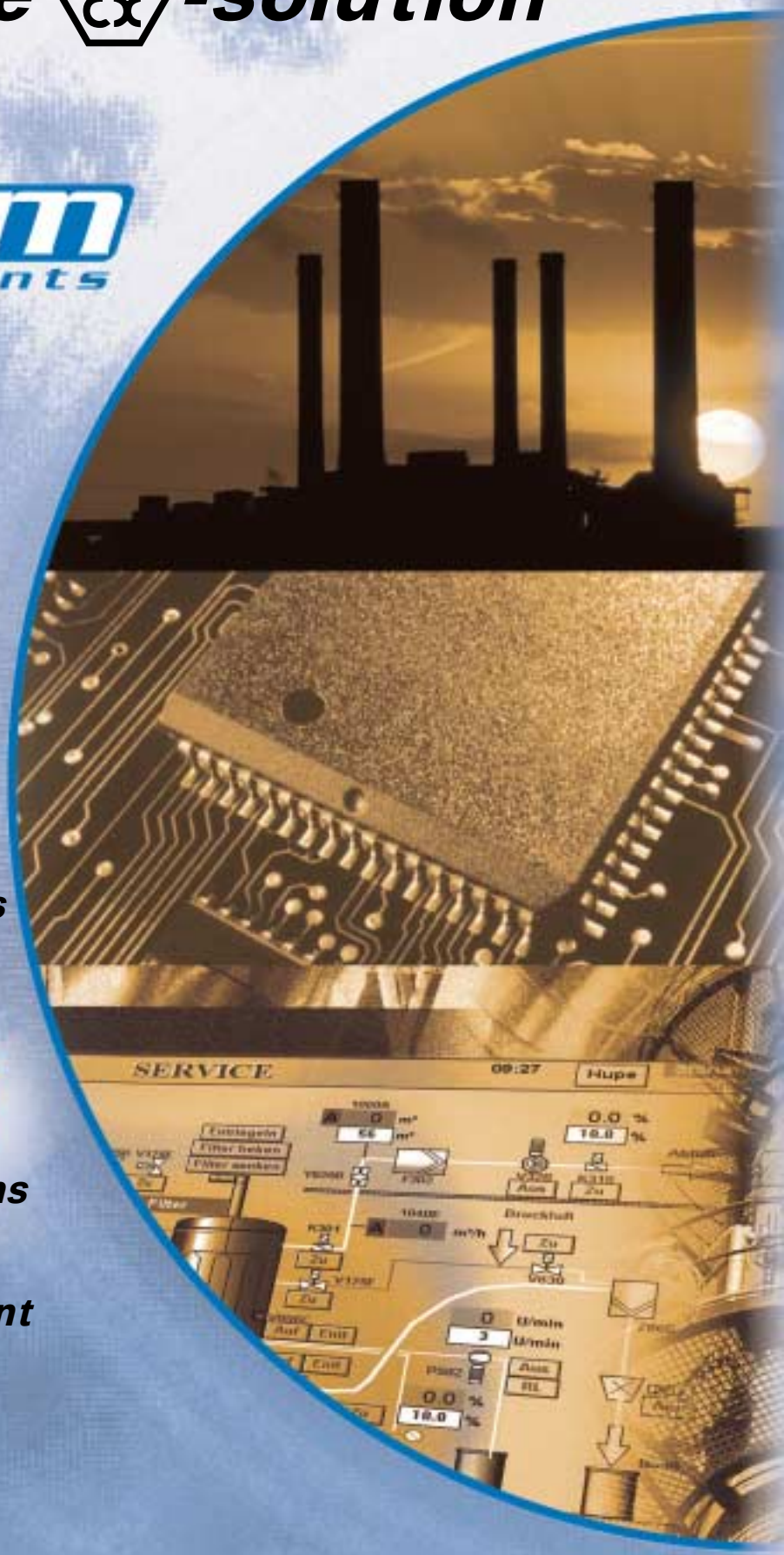
Class I Div 2

Ex-data i.roc 51x -Ex:
Ex designation
NI Class I Div. 2 Group A-D T6
Ⓔx II 3G EEx nL IIC T6
Ⓔx II 3D T95°C IP 65
ZELM 04 ATEX 3201

Class I Div I

Ex-data i.roc 61x -Ex:
Ex designation
IS Class I Div. 1 Group A-D T4
NI Class I Div. 2 Group A-D T6
Ⓔx II 2G EEx ia IIC T4
Ⓔx II 2D T95°C IP 65
ZELM 04 ATEX 0200

The complete Ex-solution



ecom instruments

- Marketing
- Distribution
- Production
- ATEX

ecom engineering

- Development
- Consulting
- Customer-specific solutions for hazardous (classified) locations

ecom WEBfactory

- Process visualizations based on Internet technologies
- Software development

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