ecom

A PEPPERL+FUCHS BRAND

ZONE 1 / CL. I DIV 1

MINING

Intrinsically Safe PDA i.roc® Ci70 -Ex

UNIQUELY CONNECTED UNIQUE NE

IN EX-HAZARDOUS AREAS

Ci70 -Ex

Intrinsically Safe PDA **i.roc® Ci70 -Ex**
WITH ATEX / IECEX ZONE 1 / 21 AND CLASS I, II, III, DIVISION 1 APPROVAL

STATE OF THE ART

The i.roc® Ci70 -Ex is the latest development in ecom's successful i.roc® series and, at the same time, the first PDA to have been jointly developed in conjunction with Intermec. Its global certifications and worldwide ecom Support Service make it a fully deployable product solution to ensure maximum productivity at all times.

Mobile computers for use in potentially explosive environments often constitute a compromise as they cannot use the latest technologies. Intermec and ecom have therefore collaborated to produce and launch a state-of-the-art, intrinsically safe handheld computer solution.

APPROVALS

In addition, the i.roc® Ci70 -Ex combines the widest range of global approvals for use in hazardous environments, from ATEX through IECEx to NEC, so that the use and integration of different devices on different continents is no longer required. Therefore it defines the new industry standard for intrinsically safe mobile computing.

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A PEPPERL+FUCHS BRAND

UNIQUELY CONNECTED-
WHEREVER YOU ARE

i.roc®

MOBILE
COMPUTING

1 The unique modular solution of the i.roc® Ci70 -Ex combines state-of-the-art technology with a flexible, modular head system for all kinds of data acquisition systems:
LF, HF and UHF RFID as well as 1D Barcode Laser Scanner, 2D Multi-Range Barcode Imager and combined head modules (RFID and 1D Scanner)

2 The world's only PDA with global explosion protection approval for ATEX / IECEx Zone 1 and NEC Class I, Division 1, combined in a single device

3 The world's only Zone 1 and Class 1, Division 1 certified PDA with wide-area radio (WWAN 3G UMTS and CDMA)

4 The world's first Zone 1 and Class 1, Division 1 certified handheld computer with complete WLAN standard (IEEE 802.11 a/b/g/n)

Ci70 -Ex

UNIQUE
MODULAR SOLUTION

THE MODULAR HEAD DESIGN

Using a unique modular design, the i.roc® Ci70 -Ex can be specifically configured to the customer's requirements by selecting different head modules. When requirements change, the head module on the unit can be replaced by one of the ecom Service Centers.

In addition to a traditional 1D Barcode Laser Scanner with high motion tolerance as well as Radio Frequency Identification (RFID) technology with the main frequency ranges (LF, HF or UHF), an intrinsically safe version of a 2D Multi-Range Barcode Imager is now available for the first time. Hence, the i.roc® Ci70 -Ex has the latest near and far scanning technology.

Thanks to the space-saving and form-integrated head modules it provides an ergonomic design, balance and extreme ruggedness. This is instead of a traditional approach using an attached housing or snap on module, which may come loose or has to be charged separately.

The structural unit with the basic housing of the PDA also ensures the stability and ruggedness of the head module.

WORLDWIDE SAFETY
CONNECTIVITY ABOVE
WORLDWIDE STANDARDS

RANGE OF FUNCTIONS

- Multi-core OMAP processor - 1 GHz

- 512 MB RAM, 1 GB flash memory

- Windows Embedded Handheld 6.5.3

- WWAN: 3G UMTS / CDMA

- WLAN: 802.11 a/b/g/n

- Bluetooth: 2.1 EDR

- IrDA infrared interface

- A-GPS

- Attitude sensor

- Brilliant 3.5" VGA display - rugged Gorilla Glass® with backlight and touch panel

- Long service life due to ruggedness and wear-resistance

HEAD MODULES

Head Module	Function	Description	Typical applications	Range
1D Laser Barcode Scanner: **SN-SE955**		Cost-effective solution for all common 1D barcodes even under the most extreme conditions.	• Warehouse and logistics • Asset tracking • Product and equipment identification	10 cm to 90 cm
2D Multi-Range Barcode Imager: **EN-EX25**		The self-focusing 2D imager lens allows a wide range of applications for both near and far range. Automatic read correction enables barcode scanning even through safety glass.	• Warehouse and logistics • Asset tracking • Product and equipment identification	15 cm to 15 m
LF RFID Reader (Air Coil): **NL-TLB30**		Rugged 125/134 kHz reader with Air Coil antenna. Well-suited for reading / writing RFID tags even on metal. Water resistant and resistant to electromagnetic fields.	• Equipment identification • Asset and inventory management	up to 10 cm
LF RFID Reader (Ferrite): **NF-TLB30**		Like NL-TLB30, but with Ferrite antenna. Optimized for reading glass transponders.	• Equipment identification • Asset and inventory management	up to 10 cm
Trovan RFID Reader: **NT-LID**		Very robust 125 kHz reader using the patented TROVAN-protocol. Unprecedented readability near metals; transponders can be attached to metals, even flush mounted in metals. Resistance to electromagnetic interference.	• Access Control • Asset and Inventory Management • Gas cylinder tracking	up to 10 cm
HF RFID Reader: **NH-UNI13**		13.56 MHz reader with internationally recognized RFID technology and internationally standard frequency. Supports ISO 15693, ISO 14443 etc. Ideal for applications in which the transponders not only have to be read, but also written.	• Physical access control • Product identification	up to 10 cm
UHF RFID Reader: **NE-UNI900 (ETSI)** **NU-UNI900 (FCC)**		Latest high performance RFID technology. Ideal for applications where longer read ranges are required. 868 MHz and 915 MHz versions available.	• Warehouse • Logistics	1 cm to 80 cm
Single Cap:		Housing cover only. However, head modules can be added at any time.	–	–

COMBINED HEAD MODULES	DESCRIPTION
SL-SE955-TLB30	LF RFID Reader (Air Coil) 1D Barcode Scanner Combination of 1D Barcode Scanner and 125 / 134 kHz RFID Reader (Air Coil).
SF-SE955-TLB30	LF RFID Reader (Ferrite) 1D Barcode Scanner Combination of 1D Barcode Scanner and 125 / 134 kHz RFID Reader (Ferrite).
SH-SE955-UNI13	HF RFID Reader 1D Barcode Scanner Combination of 1D Barcode Scanner and 13,56 MHz RFID Reader
ST-SE955-LID	Trovan RFID Reader 1D Barcode Scanner Combination of 1D Barcode Scanner and Trovan RFID Reader.

RETURN ON INVESTMENT

• When using the i.roc® Ci70 –Ex, many of our customers obtain a full return on investment within only a few months.

• Reduces paperwork and shortens office working hours by direct processing and availability in the ERP system or similar.

• Reduces inspection times by up to 30%

• Improves data quality and reduces error rates

Ci70 -Ex

INTERMEC PLATFORM

The i.roc® Ci70 -Ex is based on the successful CN70e platform. For this reason the i.roc® Ci70 -Ex is fully compatible with development tools and applications from the Intermec Development Library and easy to integrate in an environment of devices of the existing 70 series from Intermec.

This also has advantages when maintaining various PDAs as there is no need to distinguish between the individual devices.
This allows effortless management of devices.

In contrast to the CN70e, the i.roc® Ci70 -Ex:
• **is intrinsically safe**
• **offers various head modules for data acquisition, which allows flexible use.**

SYSTEM INTEGRATION

Intermec SmartSystems™
For seamless, intelligent integration into your workflow, functions such as SmartSystems™ installation and ScanNGo clients are available from Intermec.

These functions can be used for configuration or installation in advance or carried out locally, for example by scanning a barcode to ensure usability. The devices can also be provided with the required configuration at the customer's request.

Intermec SmartSystems™ enables easy and efficient maintenance of all systems of a company by allowing administrators to manage PDAs, including the i.roc® Ci70 –Ex, from a web portal and to install operating system and software updates online. This means that the devices can remain on-site at all times, even when the software is being updated.

RUGGEDNESS

Due to its rugged construction, the i.roc® Ci70 -Ex is ideally suited for mobile applications requiring compact design without compromising on technology. The i.roc® Ci70 -Ex was developed with consideration for all the adversities of everyday work of its users. Extreme weather conditions or drops from distances of up to 1.2 m (4 feet) are no problem thanks to its special design as well as gas and dust certification.

POWER MANAGEMENT & BATTERY

Innovative power management and lithium-ion technology of the batteries ensure extremely long operating times of at least 10 hours - sufficient for a full workday. Charging spare batteries during the shift is no longer required. If the battery is not fully charged and fails during a shift, the device can be equipped with a spare battery in non-hazardous areas at any time. To eliminate confusion between standard and intrinsically safe batteries, ecom has ensured by mechanical means, that only intrinsically safe batteries can be used.

INDUSTRIES THAT REQUIRE DEVICES CERTIFIED FOR HAZARDOUS AREAS

More than 60% of manufacturers are in need of intrinsically safe devices including; Oil & gas, chemical and pharmaceutical industries, but also textile, cosmetic, aerospace, automotive, food, agricultural, mining and munitions industries - just to name a few.

TYPICAL TYPES OF LOCATIONS WHERE GASES ARE PRESENT INCLUDE

- Oil rigs, refineries, gasoline storage and dispensing areas
- Dry cleaning plants where vapors from cleaning fluids can be present
- Aircraft hangars and fuel servicing areas
- Utility gas plants, and operations involving storage and handling of liquefied petroleum gas or natural gas

- Cosmetic and pharmaceutical plants
- Chemical and paint plants

TYPICAL TYPES OF LOCATIONS WHERE COMBUSTIBLE DUSTS ARE PRESENT INCLUDE

- Grain elevators
- Flour and feed mills
- Plants that manufacture, use or store magnesium or aluminum powders.
- Producers of plastic, medicines and fireworks
- Producers of starch or candies
- Spice-grinding plants, sugar plants and cocoa plants
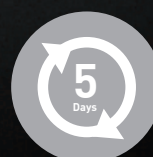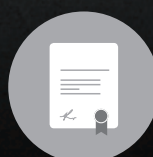- Coal preparation plants and other carbon handling or processing areas

SUPPORT

Support makes all the difference: Being your partner, we provide professional solutions.

Not only before and during, but particularly after the sale and during the daily use of our products, it is crucial that you rely on our mobile devices each and every day. To ensure this, ecom will provide you with professional assistance and customer care worldwide.

SERVICE CONTRACT

By signing up for our ecomprehensive service package, we offer you a guaranteed turnaround time of five working days at our worldwide ecom Service Centers in Germany, United States of America and Singapore

- Free servicing as part of the service contract
- Predictable costs
- Minimal downtime
- Professional solutions with the guarantee you need.

Ci70 -Ex

KEYPAD

The i.roc® Ci70 -Ex comes with a QWERTY keypad for regular text input or a numeric keypad with large function keys.
A sensor measures the ambient light and adjusts the keypad backlight accordingly. In this way, readability is guaranteed even in poor light conditions.

SCAN HANDLE

The pistol grip can be easily attached to or removed from the housing as required. The handle expands the functions and applications through its ergonomic design.

DOCKING STATION

The Dual and Quad Docks are used to charge the device battery.
The Desktop Dock and Single Dock provide USB connectivity.
The various cups and base docks make them fully customizable.

1   Quad Dock, Quad Dock Ethernet

2   Dual Dock

3   Desktop Dock

4   Single Dock
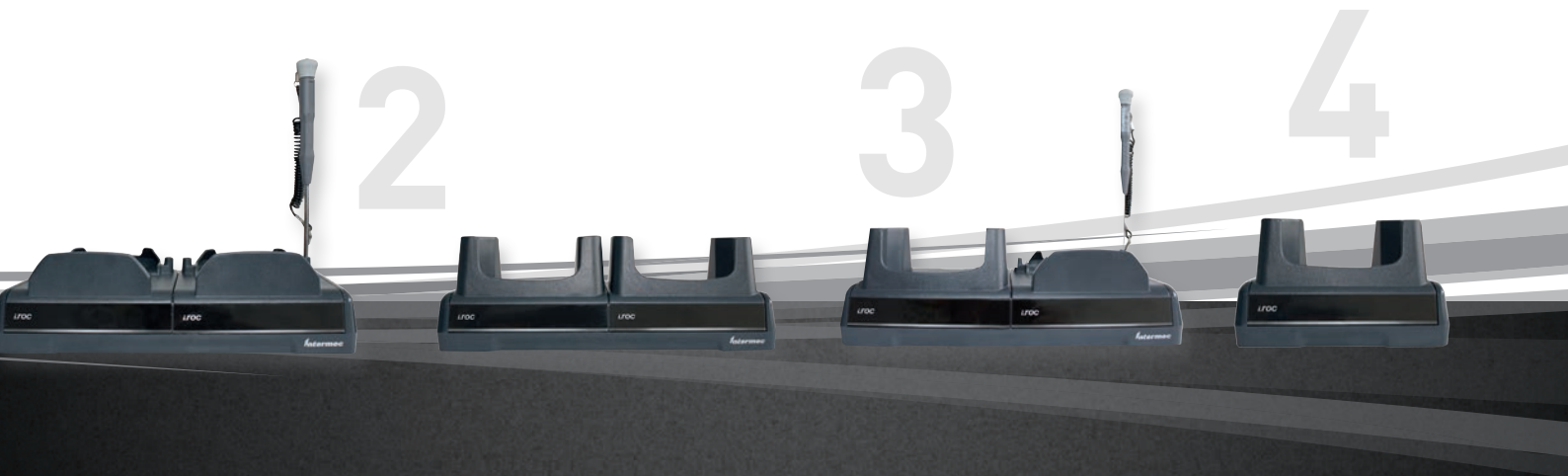
UNIQUELY FLEXIBLE -
AT ALL TIMES

FLEXIBILITY

The optional WWAN module combines both mobile standards UMTS and CDMA in a single device. This also means maximum flexibility for international companies. The PDA can be used worldwide as the built-in WWAN module supports all main wireless standards.

GSM/UMTS/CDMA/GPS

The i.roc® Ci70 -Ex constitutes the only solution for Zone 1/21 and Class I, II, III, Division 1 that combines all wireless networking (WWAN, WLAN and Bluetooth 2.1) in a single device. This allows fast data exchange across different networks even where coverage conditions are difficult. Depending on the user's location due to the on-the-fly selection function, the i.roc® Ci70 -Ex is able to dial into the respective networks, thus ensuring continuous network coverage.

DURABILITY

A durable display protected by Gorilla Glass® and laser etched, high wear-resistant keypad buttons complete the excellent user experience:

- permanent readability of the keys
- display readable in all lighting conditions and operable in rain
- minimizes downtime such as repair and maintenance times
- increases PDA service life, thereby reducing TCO (total cost of ownership)

WLAN: 802.11 a/b/g/n

Approved for Zone 1 / 21 and Class I, II, III, Division 1, the i.roc® Ci70 -Ex is the first handheld computer that offers the WLAN standard n, enabling integration of the i.roc® Ci70 -Ex in all WLAN environments with 2.4 or 5 GHz. The n-standard increases the signal range and hence network coverage as well as offering the highest data transfer rates.

WINDOWS EMBEDDED HANDHELD 6.5.3

Thanks to a resistive touch display, Windows Mobile™ 6.5.3, the latest standard for industrial PDAs, can be navigated using a stylus or fingers even in humid or wet conditions or when wearing gloves.

CERTIFICATION

ATEX EUROPE	**IECEx INTERNATIONAL**
II 2 G ia IIC T4 Gb IP64	Ex ia IIC T4 Gb IP64
II 2 D ia IIIC T135°C Db IP6X	Ex ia IIIC T135°C Db IP6X
Mining	**Mining**
I M1 Ex ia I Ma	Ex ia I Ma
INMETRO BRAZIL	**ETL (NORTHERN AMERICA)**
Ex ia IIC T4 Gb IP64	Class I, Division 1, Groups A,B,C,D, T4
Ex ia IIIC T135° C Db IP6X	Class II, Division 1, Groups E,F,G, T4
	Class III
	Class I Zone 1 IIC T4
	Class II Zone 21 IIIC T135°C
EXPLOLABS (SOUTH AFRICA)	**MSHA (US MINING)**
Ex ia IIC T4 Gb IP64	Certification: I.S. Approved for use in
Ex ia IIIC T135°C Db IP6X	Methane Air Mixtures
Ex ia I Ma -20 °C ⩽ Ta ⩽ +50 °C	Approval No. 23-A 150001-0
	TIIS (JAPAN)
	Ex ia IIC T4

Ci70

APPLICATIONS

Process reliabiltiy is essential for product quality. This can be achieved by carrying out all processes precisely according to their specifications. The i.roc® Ci70 -Ex, with a direct link to an ERP system via WLAN or UMTS, offers the ideal solution. Processes can be supported, controlled and documented in real-time from stock removal through to the production line and to the warehouse.

ASSET & LIFE-CYCLE MANAGEMENT

The i.roc® Ci70 -Ex can be used to configure, control and monitor system components and field devices via a wireless connection. During downtime or in the event of system errors, cancellation or breakdown expenses can occur. The freedom of movement and flexibility will make work easier and also improve both production and maintenance. In summary, this ensures effective systems management, optimal process execution and reduced downtime.

MAINTENANCE AND SYSTEMS SERVICE

Based on an adequate round-trip software, a route is created within the system that the field worker covers on his regular round with the i.roc® Ci70 -Ex. The system components (e.g. individual valves) can be identified by means of RFID or barcode and checked against exact specifications. The results are then available online or per synchronization after completion of the round. Information on critical conditions and the resulting steps help to effectively reduce downtimes.

WAREHOUSING AND LOGISTICS

The i.roc® Ci70 -Ex uses barcodes and RFID to quickly and accurately detect and identify goods in warehouses, on trucks and in cars. The 2D Multi-Range Imager reads barcodes up to 15 m (49 ft) away and eliminates walking unnecessary distances and regular stooping or bending for employees. The direct data connection via WLAN or WWAN keeps the ERP system continuously up to date.

SECURITY THROUGH PERSONAL IDENTIFICATION

In certain situations, it is important to locate employees. For example, thanks to integrated GPS, injured users can be located which allows rescue teams to reach them in hazardous areas more quickly to provide the necessary aid.

TECHNICAL DATA

Physical Characteristics	incl. battery weight approx. 900 grams (2 pounds) 225 x 85 x 58 mm (8.8 x 3.3 x 2.3 inches) (standard configuration) 249 x 85 x 58 mm (9.8 x 3.3 x 2.3 inches) (with optional head module)
Environmental	Operating Temperature -20° C ... +50 °C (-4 °F ... +120° F) Storage Temperature -20° C ... +60° C (-4° F ... +140° F) Drop Specifications 1.20 m (4 feet) according to MIL-STD-810G at -20°C and +50° C (-4° F and +120° F) Electrostatic Discharge +/- 8 KV contact discharge and +/- 15 KV air discharge Rain and Dust Resistance IP65
Power	Battery 3.7 V, 4,000 mAh • IEEE 1725 compliant • Li-Ion • swappable
Operating System	Windows Embedded Handheld 6.5.3
Processor	OMAP 3715 Multi Core Processor 1 GHz
Memory and Storage	512 MB RAM, 1 GB Flash Memory, customer-accessible microSD slot for exchangeable memory cards up to 32 GB
Display	3.5 inches, VGA (480 x 640 pixels), 65,536 colors, ambient light sensor, LED backlight, transmissive TFT-LCD touch screen display, highly durable due to Gorilla Glass®
Interfaces	USB – Full Speed 2.0 Client • IrDA
Wireless LAN	IEEE 802.11 a/b/g/n • IEEE 502.11d • Security: WPA2, WEP, TKIP, AES; Authentication OPEN, SHARED-KEY, PEAP (MS-CHAP V2, Generic Token Card (GTC), MD5), TLS, TTLS (PAP, CHAP, MS-CHAP, MS-CHAP V2, PAP/Token Card, EAP with GTC), LEAP, FAST • Cisco CCXv4 compliant
Wireless WAN	US carrier certifications: AT&T, Verizon 3G WWAN for data communications: UMTS/HSDPA/HSUPA (14.4 Mbps D/L, 5.76 Mbps U/L peak); Frequencies: 850, 900, 1800, 1900 MHz CDMA/EV-DO Rev A (3.1 Mbps D/L, 1.8 Mbps U/L peak); Frequencies: 800, 850, 1900, 2100 MHz GSM, GPRS, EDGE; Frequencies: 850, 900, 1800, 1900 MHz
Bluetooth	Class II, Version 2.1 + EDR • Operating Channels: 0 - 78 (2402 - 2480 MHz) • Data Rates 1, 2, 3 Mbps
GPS	A-GPS
Audio	Loudspeaker • Bluetooth headset support • VOIP audio support via headset
Sensor Technology	Accelerometer: Enables automatic or application-specific features
Head Options	combined head modules (RFID + 1D laser scanner) 2D imager, 1D laser scanner, HF RFID, LF RFID, UHF RFID, TROVAN
Keyboard	Backlit numeric or alpha numeric • laser etched hard key caps
Regulatory Approvals and Conformity	Safety: 60950-1 EMC: FCC, CE Laser: IEC/EN 60825-1 Class 2 Environmental: WEEE, RoHS Radio: FCC, CE Battery: UL 1642, IATA

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