

**Digitalizing hazardous areas.  
Enabling connectivity.  
Enhancing mobility.**



Mobile Computing and  
Communication



Your automation, our passion.



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# Ensuring Safety Across the Globe

Explosion protection is a matter of trust. That is why ecom sets the highest standards by collaborating directly with our customers. Only by working together can we tailor our solutions to our customers' exact requirements. Our global service network allows us to integrate this concept into the lifecycle of our products. Personalized support is always just a phone call away.



## Efficiency and Connectivity Anytime and Anywhere

Companies from a range of industries are facing mobile workforce challenges including:

- Maximizing workforce productivity
- Providing the right information when and where it is needed
- Accurate data capture for real-time decision making
- Minimizing time and costs
- Improving knowledge retention

# Innovative Solutions from a Single Source

Pepperl+Fuchs offers a range of coordinated peripherals, accessories, and software solutions as an ideal complement.

## Exploring Mobility

Organizations are starting to realize how mobility solutions can benefit their business. Today, the focus is on technologies that reduce costs and improve efficiency. Game-changing breakthroughs in mobile computing and communication technologies are enabling industries to improve workforce safety and productivity, data quality, and the speed and

accuracy of decision-making. The Internet of Things (IoT) has become increasingly important in the industry and will change the way companies deploy labor to use resources more effectively.



### Applications 4.0

- Inspection / Maintenance
- Asset management / Tracking
- Collaborative working
- Scanning / Auto ID
- Process automation / Operations
- Lone worker protection / Localization (GeoIP)
- Engineering / Installation
- Augmented reality (AR)
- Security / Safety
- Push-to-talk (PTT)



### Hardware

#### Peripherals

- Scanner
- Camera
- Headset
- Radio speaker microphone

#### Certification

- Ex certifications
- Regulatory
- Wireless certifications

#### Accessories

- Desktop charger / Docking
- Spare battery
- Case
- Cradles



### Software

- User management
- Customized roles and rights
- Android Enterprise Recommended (AER)
- Android zero-touch
- Kiosk mode
- APKs
- API / 3rd party



### Safety

- Mobile worker
- Assets
- Data



### Support

- Sales and application engineering
- Service level agreements
- Service with repair and Ex testing



### Digital Products and Services

- Preconfiguration / Staging
- Mobile device management (over-the-air)
- Device analytics

# Digital Products and Services

Digital Products and Services is a solution that combines automated staging, mobile device management, and device analytics. It can also be used as a full-fledged enterprise mobility management system if desired.

At the customer's request, ecom's mobile devices can ship from the factory with predefined custom configurations such as security settings, applications, and wireless setup. This allows devices to be used anywhere in the world immediately upon delivery.

The devices can be managed via the ecom online platform and updated remotely at any time during operation without having to be sent to local IT staff or the head office.

Cloud servers hosted in Germany meet the highest data protection standards and guarantee high data availability and security.

One-time staging and enrolling can also be done internally via ecom's production servers. If desired, device diagnostics and analytics can collect real-time operational data and fault analyses to continuously monitor device status and fix malfunctions preventively or immediately.

Additionally, the platform analyzes historical data to detect critical software events, installations, and other safety-critical processes. A statistical accumulation of events can be used to establish correlations and causalities between software errors, geographical data, and Wi-Fi coverage, for example.

Digital Products and Services is a ready-to-use service that ensures quality and security for all devices. This saves time and valuable resources.

## Staging and Enrolling

eCSL – Custom Service Load

- Custom device preconfiguration
- Delivered ready-to-use

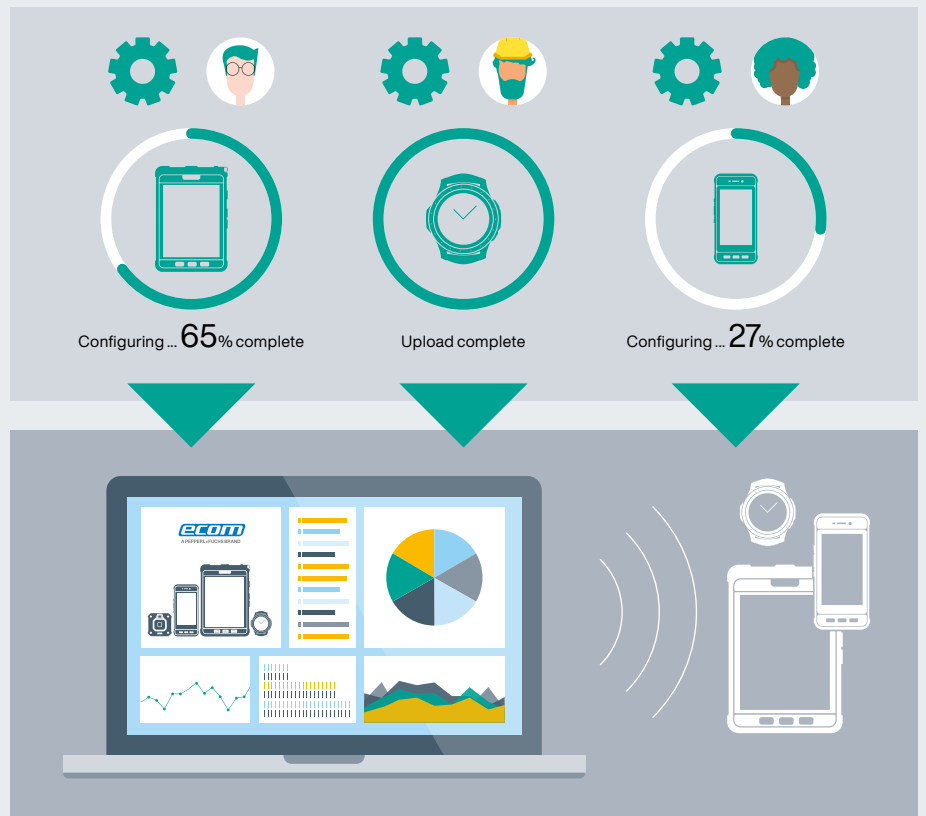
## Configuring and Management

eMDM – Mobile Device Management

- Update devices around the world simultaneously

## Device Diagnostics

- Analytics help avoid problems and correct errors



Smart-Ex® 02

# The Next Generation of Rugged and Intrinsically Safe Smartphones

The Smart-Ex® 02 is the world's first intrinsically safe smartphone for Zone 1/21 and Div. 1 areas that meets Google's sophisticated Android Enterprise Recommended (AER) validation. In addition, it meets all important global hazardous location and regulatory certifications.

The rugged smartphone has a large, high-resolution display, powerful features, and optimized accessories. Its extended temperature range makes it suitable for even the harshest environments. Designed to support 21 LTE frequency bands, the Smart-Ex® 02 has no SIM lock and can be connected to different networks worldwide. An Android™ 9 operating system enables the intrinsically safe device to work safely, quickly, and efficiently.

The ergonomic design and intuitive user interface enhance the user experience, and optimized accessories and peripherals

ensure total compatibility with current and future ecom products. Equipped with the most **powerful replaceable battery** (4,400 mAh) on the market, the device can handle unexpectedly long shifts and runtimes.

The Smart-Ex® 02 also sets new standards when it comes to security. The Android Enterprise Recommended certification and regular security updates prevent unauthorized access to confidential personal and company data.

To ensure unlimited, long-term use of the smartphone, ecom offers a three-year service level agreement. Pepperl+Fuchs' global sales and service network provides excellent customer service around the globe. Support from ecom's system engineers and development teams is also available when software requirements change.





### Operating System

- Android™ AER

### Connectivity

- WiFi standard 802.11 a/b/g/n/ac/e/k/r/h
- WiFi 2.4 GHz and 5 GHz support
- Bluetooth® 4.2 incl. BLE
- GPS/A-GPS/Glonass/Beidou/Galileo/NFC

### Band

- Supports 21 LTE frequency bands
- Dual SIM allows flexible integration in business environments

### Ports

- Waterproof magnetic USB 2.0 connection

### 2 Cameras (Front and Rear)

- 12 MP camera with autofocus and LED flash + 5 MP camera

### Dedicated Keys

- User programmable buttons for special functions, e.g. camera, alarms

### Memory

- 3 GB RAM, 32 GB ROM
- Up to 128 GB additional memory with microSD

### Power

- Powerful replaceable battery, lasts an entire working day (4,400 mAh)

### Extended Temperature Range

- 20°C to +60°C



## Highlights



World's first 10" Android Tablet for Zone 2/22; Division 2



21 LTE frequency bands, no SIM lock, and SIM free for flexible use around the world



Individualized service and support around the globe with faster response times



Ultra-rugged, 5" multi-touch display can be operated with gloves



Latest Android™ operating system: quick, safe, and efficient



Ergonomic design and an intuitive user interface: dedicated keys like push-to-talk and volume control can be configured individually



# Smart-Ex® 02



Smart-Ex® 02 DZ1



Smart-Ex® 02 DZ2

## Extensive Range of Accessories and Peripherals from a Single Source

Components such as remote speaker microphone (RSM) and headsets expand the range of applications for the new Smart-Ex® 02 and are perfectly suited for future IIoT applications.

### Accessories

- Travel charger TC S02
- Desktop charger DS S02
- Battery charger DC Ex-BP S02
- USB data cable PC S02

Additional accessories can be found at

[www.pepperl-fuchs.com/smart-ex-02](http://www.pepperl-fuchs.com/smart-ex-02)

### Compatible Peripherals

#### SM1P

Bluetooth® Headset



#### Ident-Ex® 01

Barcode scanner /RFID reader



#### CUBE 800

Ex-Camera



#### RSM-Ex 01

Loudspeaker microphone





**Technical Data: Smart-Ex®**

<b>Operating system</b>	Android™ Latest available Android firmware release For details, see <a href="https://www.ecom-ex.com/products/communication/cell-phones/">https://www.ecom-ex.com/products/communication/cell-phones/</a>
<b>Chipset</b>	Qualcomm Snapdragon 450 platform
<b>Band</b>	Cellular frequency bands: 4G LTE FDD: B1, B2, B3, B4, B5, B7, B8, B11, B12, B13, B20, B21, B25, B26, B28, B66, B71 4G LTE TDD: B38, B39, B40, B41 3G UMTS: 850/900/1,700/1,900/2,100 MHz 2G GSM: 850/900/1,800/1,900 MHz
<b>WiFi</b>	WiFi 2.4 GHz and 5 GHz support WiFi standard 802.11 a/b/g/n/ac/e/k/r/h
<b>Memory</b>	3 GB RAM, 32 GB ROM
<b>User memory</b>	SD card up to 128 GB
<b>Applications</b>	Google Play Store certified
<b>Bluetooth® SMS, MMS (text, image, audio, video)</b>	Bluetooth® 4.2 incl. BLE (Bluetooth® Low Energy) Support SMS and MMS
<b>GPS, NFC</b>	GPS/A-GPS/Glonass/Beidou/Galileo/NFC
<b>E-mail client</b>	EAS, Gmail, POP3, IMAP
<b>Power</b>	Li-Ion 3.7 V/4,400 mAh/16.28 Wh
<b>Operating temperature</b>	-20°C to +60°C
<b>Protection class</b>	IP68, MIL-STD-810G
<b>Size</b>	163 × 82 × 22 mm
<b>Weight</b>	Approx. 380 g
<b>Dedicated keys</b>	Alarm/power/multifunction/volume/hardware buttons for Android features
<b>Ports</b>	3.5 mm jack connection with special ecom mounting solution Waterproof magnetic USB 2.0 connection
<b>Display size</b>	12.7 cm (5.0 in)
<b>Display type</b>	Extreme shock- and scratch-resistant Gorilla® Glass with glove touch and wet mode
<b>Microphone</b>	Dual mic solution with three selectable background noise suppression options
<b>Speaker</b>	Loudspeaker with Gore® Protective Vents
<b>Camera</b>	12 MP rear with autofocus and LED flash with flashlight function/5 MP front (optional)
<b>Video streaming</b>	Support MP4, M4V, 3GP, 3G2, TS, WMV, ASF, AVI, FLV, MKV, WEBM
<b>LED flashlight</b>	Yes

Ex-Handy 10

# The Next Generation of Rugged and Intrinsically Safe Feature Phones

## Ex-Handy 10— Flexible Communication in Hazardous Areas

Simple, rugged, and practical: the Zone 1/21- and Div. 1-certified 4G/LTE feature phone is ideal for a wide range of applications—from pure communication to lone worker protection and innovative Industry 4.0 applications.

The Ex-Handy 10 is suitable for global 4G communication, supports 21 LTE bands, and offers both keypad and touch-screen operation. The display is made of extremely durable, scratch-resistant Gorilla® Glass (IP68-rated) and can even be operated with gloves. The Ex-Handy 10 is designed for the harshest environments—it is operable in temperatures from -20°C to +60°C and has good readability in direct sunlight.

The feature phone has an optional 8 MP camera, which includes autofocus, LED flash, and flashlight. An advanced rechargeable battery and energy management provide outstanding operating times.

The Android™ operating system offers regular patches and security updates. To ensure unlimited, long-term use of the feature phone, ecom offers a three-year service level agreement. Pepperl+Fuchs' sales and support network provides excellent customer service around the globe. Support from ecom's system engineers and development teams is also available when software requirements change.



### Operating System

- Android™

### Connectivity

- WiFi 2.4 GHz and 5 GHz support
- WiFi standard 802.11 a/b/g/n/e/k/r/h
- Bluetooth® 4.2 (incl. BLE)
- NFC
- GPS/A-GPS/Glonass/Beidou

### LTE

- Supports 21 LTE bands

### Ports

- Waterproof magnetic USB 2.0 connection

### Camera

- 8 MP camera with autofocus, LED flash, and flashlight function

### Dedicated Keys

- User programmable buttons for special functions, e. g. alarms

### Memory

- 2 GB RAM + 16 GB ROM
- SD card up to 128 GB

### Power

- Powerful battery lasts an entire working day

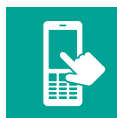


android 

## Highlights



Global approvals for Zone 1/21, Div. 1 and Zone 2/22, Div. 2



Supports both keypad and touch-screen operation



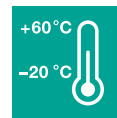
Powerful battery lasts an entire working day



Extremely rugged dust- and waterproof housing with a scratch-resistant display



Supports 21 LTE frequency bands and has no SIM lock for use around the world



Made for use in operating temperatures from -20°C to +60°C

# Ex-Handy 10



Ex-Handy 10 DZ1



Ex-Handy 10 DZ2

## Extensive Range of Accessories and Peripherals from a Single Source

Components such as remote speaker microphone (RSM) and headsets expand the range of applications for the new Ex-Handy 10 and are perfectly suited for future IIoT applications.

### Accessories

- Leather case LC H10
- Leather holster LH H10
- Cradle CR-Ex H10

Additional accessories can be found at [www.pepperl-fuchs.com/ex-handy-10](http://www.pepperl-fuchs.com/ex-handy-10)

### Compatible Peripherals

#### SM1P

Bluetooth® Headset



#### Ident-Ex® 01

Barcode scanner /RFID reader



#### CUBE 800

Ex-Camera



#### RSM-Ex 01

Loudspeaker microphone



## Technical Data: Ex-Handy 10

<b>Operating system</b>	Android™ Latest available Android firmware release For details, see <a href="https://www.ecom-ex.com/products/communication/cell-phones/">https://www.ecom-ex.com/products/communication/cell-phones/</a>
<b>Chipset</b>	Qualcomm Snapdragon MSM8909 platform
<b>Band</b>	Cellular frequency bands: 4G LTE FDD: B1, B2, B3, B4, B5, B7, B8, B11, B12, B13, B20, B21, B25, B26, B28, B66, B71 4G LTE TDD: B38, B39, B40, B41 3G UMTS: 850/900/1,700/1,900/2,100 MHz 2G GSM: 850/900/1,800/1,900 MHz
<b>WiFi</b>	WiFi 2.4 GHz and 5 GHz support WiFi standard 802.11 a/b/g/n/e/k/r/h
<b>Memory</b>	2 GB RAM + 16 GB ROM
<b>User memory</b>	SD card up to 128 GB
<b>Applications</b>	Google Play Store certified
<b>Bluetooth® SMS, MMS (text, image, audio, video)</b>	Bluetooth® 4.2 incl. BLE (Bluetooth® Low Energy) Support SMS and MMS
<b>GPS, NFC</b>	GPS/A-GPS/Glonass/Beidou/NFC
<b>E-mail client</b>	EAS, Gmail, POP3, IMAP
<b>Power</b>	Li-ion 3.7 V/4,400 mAh/16.28 Wh
<b>Battery life</b>	Up to 600 hours standby
<b>Operating temperature</b>	-20°C to +60°C
<b>Protection class</b>	IP68, MIL-STD-810G
<b>Size</b>	148 × 67 × 24 mm
<b>Weight</b>	Approx. 330 g
<b>Dedicated keys</b>	Alarm/Power/Multifunction/Volume/Hardware buttons for Android features
<b>Ports</b>	3.5 mm jack connection with special ecom mounting solution Waterproof magnetic USB 2.0 connection
<b>Display size</b>	6.6 cm (2.6 in)
<b>Display type</b>	Extreme shock- and scratch-resistant Gorilla® Glass with glove touch and wet mode
<b>Microphone</b>	Dual mic solution with three selectable background noise suppression options
<b>Speaker</b>	Loudspeaker with Gore® protective vents
<b>Camera</b>	8 MP rear camera with autofocus and LED flash (optional)
<b>Video streaming</b>	Support MP4, M4V, 3GP, 3G2, TS, WMV, ASF, AVI, FLV, MKV, WEBM
<b>LED flashlight</b>	Yes



# Tablets for Industrial and Hazardous Areas

## Successor of the World's First Intrinsically Safe Tablet

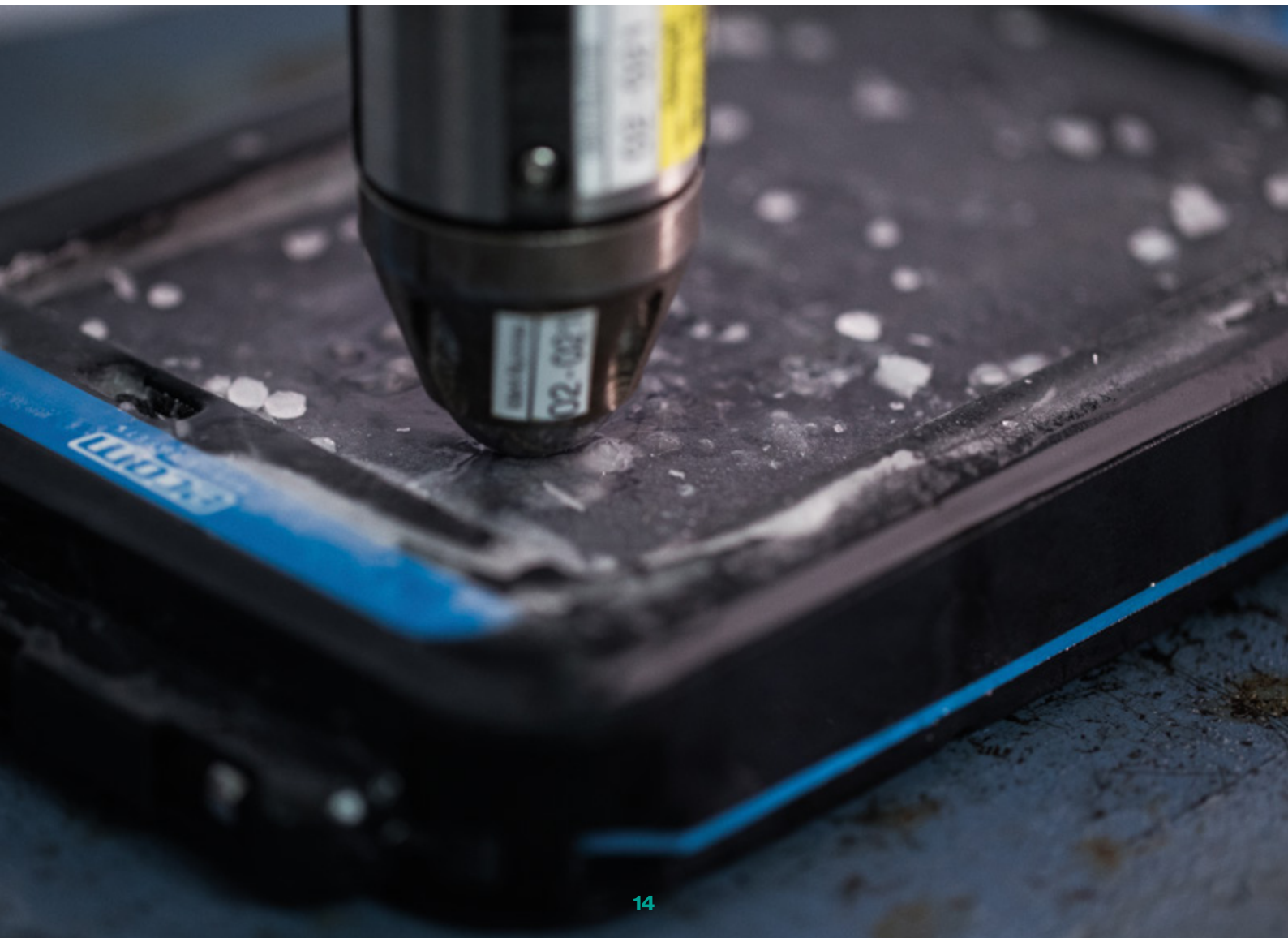
ecom's hazardous area tablet, the Tab-Ex® 02, leverages Samsung's expertise and brings a new level of customer-focused solutions and increased ease of use to mobile workers in the oil and gas, refining, chemical, pharmaceutical, and other hazardous industries.

Since many tasks are performed in both hazardous and non-hazardous areas, ecom offers an entire family of tablets, peripherals, and accessories suitable for use in Zones 1/21, 2/22, Div.1 / Div.2, and rugged environments.

## Professional — Meet the New Tab-Ex® 02

Designed for powerful performance and safe operation, the Tab-Ex 02 is a stylish, portable tablet device that can go anywhere to get the job done. ecom offers customized configurations via its MDM system.

- Thermal endurance testing: samples placed within an environmental test chamber and subjected to four weeks of extreme heat and humidity and one day of extreme cold.
- Impact tests: test weights were dropped onto the samples from different heights.
- Drop tests: samples were dropped onto a concrete floor from a height of 1m.
- Overpressure and flame propagation test: the samples then underwent hydrostatic overpressure testing to verify the strength and integrity of the enclosure. Following this, an internal explosion of test gases was triggered to ensure that the flames did not spread from the interior to the exterior.
- Ingress protection: following the tests above, the objects were tested for resistance to the ingress of water and dust in accordance with IP64.



## 2 Cameras

- 8 MP rear + 5 MP front camera
- Optional: Non-Camera

## Sensors

- Face recognition, NFC, accelerometer, proximity, light, gyroscope, geomagnetic, hall, GPS

## Power

- Li-ion battery 4,450 mAh
- Up to 11 hours of battery life



## Operating System

- Android™ Latest firmware release

## Memory

- RAM: 3 GB, memory: 16 GB, with external MicroSD up to 256 GB

## Safety

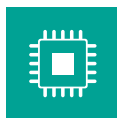
- KNOX 3.2
- Face recognition

android 

## Highlights



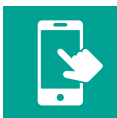
Global certifications for Zone 1/21 and Div. 1 and Zone 2/22 and Div. 2



Fast processor and high storage capacity provide augmented reality applications



Rugged design: dust-, water-, and shock-resistant



A high-resolution, 8" touch screen, operable with gloves



High-performance Android™



Samsung Knox: reliable enterprise mobile data security



# Tab-Ex® 02



## Extensive Range of Accessories and Peripherals from a Single Source

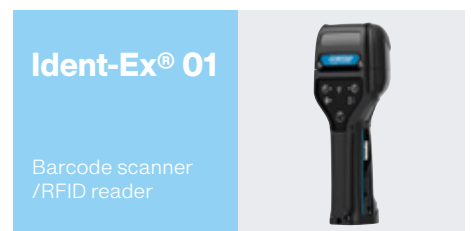
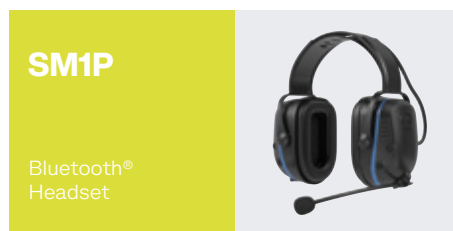
Components such as remote speaker microphone (RSM) and headsets expand the range of applications for the new Tab-Ex® 02 and are perfectly suited for future IIoT applications.

### Accessories

- Five-bay desktop charger DC T01 X2
- Leather case LC T01 X2
- Chest-strap carrying system CH T01 X2

Additional accessories can be found at [www.pepperl-fuchs.com/tab-ex-02](http://www.pepperl-fuchs.com/tab-ex-02)

### Compatible Peripherals



**Technical Data: Tab-Ex® 02**

<b>Operating system</b>	Android™ Latest available Android firmware release For details, see <a href="https://www.ecom-ex.com/products/mobile-computing/tablets-android/">https://www.ecom-ex.com/products/mobile-computing/tablets-android/</a>
<b>Chipset</b>	Exynos 7 Octa, 1.6 GHz Octa-Core (Cortex®-A53)
<b>Memory</b>	RAM: 3 GB, memory: 16 GB, with external MicroSD up to 256 GB*
<b>Display</b>	1,280 × 800 pixels (WXGA), 20.32 cm (8.0 in), TFT, 480 nit brightness, operation: also with gloves/in wet conditions and snow
<b>Sensors</b>	Face recognition, NFC, accelerometer, proximity, light, gyroscope, geomagnetic, hall, GPS
<b>Dimensions</b>	DZ2: 127.6 × 214.7 × 9.9 mm, 575 g (WiFi) / 579 g (LTE) DZ1: 162.1 × 256.0 × 33.3 mm, ca. 1,250 g
<b>Operating temperature</b>	-20°C to +50°C (DZ1)/-20°C to +55°C (DZ2/D2)
<b>Wireless capability with</b>	LTE Cat. 6 (300 Mbps)—in LTE model WiFi standard 802.11 a/b/g/n/ac (2.4 GHz + 5 GHz) WiFi Direct Bluetooth® 4.2
<b>Safety</b>	KNOX 3.2, face recognition
<b>Front and rear camera</b>	5 MP/optional: no camera
<b>Power</b>	Li-ion battery 3.8 V/4,450 mAh/16.91 Wh/up to 11 hours of battery life
<b>Degree of protection</b>	IP64

\* Please note: For safety reasons, the SD card cannot be installed or replaced after delivery.

Tab-Ex® Pro

# The World's First 10" Android Tablet for Hazardous Areas

The new Tab-Ex® Pro is the next major component in ecom's successful tablet series. Featuring the world's first ten-inch display with Zone 2/22 and Div. 2 approvals, the device is ideal for web-based content and the most demanding Industry 4.0 applications. The Samsung DeX function turns the compact tablet into a full desktop computer, and additional accessories, peripherals, digital products, and services ensure superior flexibility.

## Total Reliability, Global Use

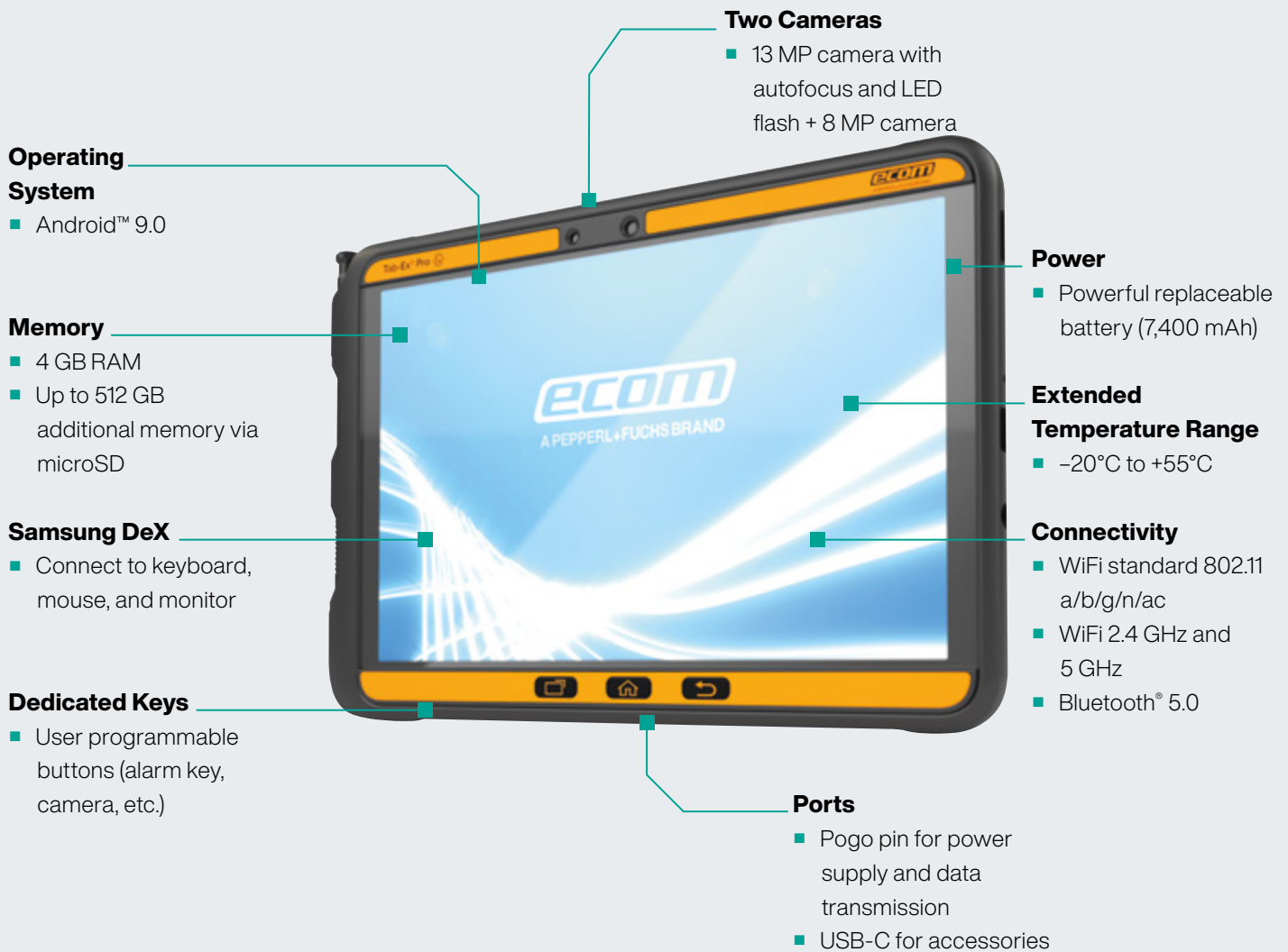
ecom's new Tab-Ex® Pro is the world's first 10.1" Android tablet to be certified for Zone 2/22 and Div. 2. Based on the Samsung Galaxy Tab Active Pro, the device stands for tested quality, compatibility, and a long-standing, successful partnership with Samsung. Despite the large screen, the tablet is impressively slim, lightweight, and easy to use. The multi-touch display

can be operated with an S Pen and with gloves, and offers optimal readability even in direct light. From indoor pharmaceutical applications to harsh environments — the Tab-Ex® Pro is designed for worldwide use in temperatures ranging from -20°C to +55°C in the most demanding industries.

## High Security Standards, Complete Protection

By combining Samsung Knox with the Android operating system, ecom's Tab-Ex® Pro ensures that company data and processes are secure. The multilayered security mechanisms of the Knox platform work together to protect against viruses, malware, and similar threats. For additional security and convenience, the device offers biometric authentication via facial recognition and a fingerprint scanner (only valid for the D2 version).





## Highlights



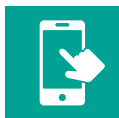
World's first 10" Android tablet for Zone 2/22; Division 2



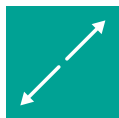
Latest Android™ operating system: quick, safe, and efficient



Connect a keyboard, mouse, and monitor via Samsung DeX mode for a desktop-like experience



Ultra-rugged 10" multi-touch display can be operated with gloves



The wide screen is designed for IIoT and web-based applications



Digital Products and Services provide a ready-to-use service that ensures quality and security

# Tab-Ex® Pro



Tab-Ex® Pro D2



Tab-Ex® Pro DZ2

## Extensive Range of Accessories and Peripherals from a Single Source

Components such as desktop charger, remote speaker microphone (RSM), and headsets expand the range of applications for the new Tab-Ex® Pro and are perfectly suited for future IIoT solutions.

### Accessories

- LC TPRO X2 leather case
- CH TPRO X2 chest harness
- BC T01 belt clip
- Carrying strap

Additional accessories can be found at

[www.ecom-ex.com](http://www.ecom-ex.com)

### Compatible Peripherals

#### SM1P

Bluetooth®  
Headset



#### Ident-Ex® 01

Barcode scanner  
/RFID reader



#### CUBE 800

Ex-Camera



#### RSM-Ex 01

Loudspeaker  
microphone



**Technical Data: Tab-Ex® Pro**

<b>Operating system</b>	Android™
<b>Applications</b>	<ul style="list-style-type: none"><li>■ Google ARCore</li><li>■ Samsung Knox</li></ul>
<b>Processor</b>	Qualcomm SDM670 Octa-Core 64 bit 2.0 GHz, 1.7 GHz
<b>Memory</b>	RAM: 4 GB, internal data memory: 64 GB, with external microSD up to 512 GB
<b>Display</b>	<ul style="list-style-type: none"><li>■ 1,920 × 1,200 pixels (WUXGA),</li><li>■ 10.1" (25.6 cm), TFT, 550 Nit brightness;</li><li>■ Operation also possible with gloves/in wet conditions</li></ul>
<b>Sensors</b>	Accelerometer, barometer, fingerprint sensor (D2 device only), gyroscope, geomagnetic sensor, hall effect sensor, RGB light sensor, proximity sensor
<b>GPS, NFC</b>	Yes
<b>Dimensions and weight</b>	243.5 × 170.2 × 9.9 mm (W × H × D); approx. 850 g (D2), 930 g (DZ2)
<b>Operating temperature</b>	-20°C to +55°C
<b>Connectivity</b>	<ul style="list-style-type: none"><li>■ LTE; WiFi standard 802.11 a/b/g/n/ac (2.4 GHz+5 GHz), VHT80</li><li>■ Bluetooth® v5.0 (LE up to 2 MBit/s)</li><li>■ WiFi Direct</li><li>■ NFC EMV L1</li><li>■ Headphone out: 3.5 mm</li><li>■ USB 3.1 Type-C</li><li>■ Pogo pin (for charging, data transfer, and USB signal for keyboard)</li></ul>
<b>SIM</b>	1 x Nano SIM
<b>Frequency bands</b>	Supported cellular frequency bands: <ul style="list-style-type: none"><li>■ 4G LTE FDD: B1, B2, B3, B4, B5, B7, B8, B12, B13, B17, B20, B28, B66</li><li>■ 4G LTE TDD: B38, B40, B41</li><li>■ 3G UMTS: B1, B2, B4, B5, B82G</li><li>■ GSM: 850/900/1,800/1,900 MHz</li></ul> <b>US-Version</b> LTE-Support: AT&T, Sprint, T-Mobile, Verizon  Supported cellular frequency bands: <ul style="list-style-type: none"><li>■ 4G LTE FDD: B2, B3, B4, B5, B7, B12, B13, B14, B17, B25, B26, B29; B66, B71</li><li>■ 4G LTE TDD: B41</li><li>■ 3G UMTS: B1, B2, B4, B5, B8</li></ul>
<b>Camera</b>	Rear: 13 MP with flash; Front: 8 MP
<b>Battery capacity</b>	Li-ion Battery 3.8 V/7,400 mAh/28.12 WH/runtime of up to 15 hours of + battery is replaceable



# Windows Tablet Rugged Mobility at Its Finest for Zone 2 and Div. 2

Pad-Ex® 01 P8 redefines the mobile tablet PC with Windows® support. In addition to its incredible ruggedness, Pad-Ex 01 P8 meets all demands and supports the 8th-generation Intel® Core™ i5 processor. It also provides battery life up to 7 / 14 hours and Windows® 10 support. The combination of durability, superior performance, and a large display makes the device an ideal addition to or replacement for desktop PCs, laptops, or wall-mounted displays in the field.

## Reliably Rugged: Thin, Light, and Strong

Pad-Ex® 01 P8 is rugged mobility at its finest. Its ultrathin, lightweight exterior measures only 20 mm in height and 1.2 kg in weight.

With its ultra-compact design, Pad-Ex 01 P8 complies with IP64 and MIL-STD 810G for vibration. Additional display protection offers durability in harsh environments and an ergonomic design makes it easy to transport.

## 11.6" Widescreen Display

- Sunlight-readable display
- Capacitive multi-touch screen

## Integrated Options for Various Applications

- Data collection
- 1D/2D barcode scanner (optional)
- 5 MP autofocus camera with LED flashlight





### Power

- Li-ion battery (3,950 mAh)
- Up to 7 hours of battery life

### 2 Cameras

- 2 MP front-facing camera + 5 MP rear camera with flashlight

### Operating System

- Windows® 10 Pro (64 Bit)



### Memory

- One DDR4 socket for 8 GB

### Storage

- M2-SATA SSD 256 GB

### Connectivity

- WWAN LTE + GPS Combo
- Intel Wireless AC9260 WiFi standard 802.11 a/b/g/n/ac
- Bluetooth® 5.0

### Expansion Slots

- One microSD card slot supports SDHC and SDXC
- One SIM card slot for WWAN data communication

### VO Ports

- Two USB 3.0
- One headphone-out/mic-in jack
- One docking connector
- One expansion connector for expansion modules
- Two RF pass-through connectors for WWAN and GPS

## Highlights



Global certifications for Zone 2/22 and Div. 2



Optional various applications like barcode scanner



Sunlight-readable, 11.6" capacitive multi-touch display with optional display protection



Thin, light, and strong design



High-speed Windows® 10 operating system

<b>Rugged features</b>	<ul style="list-style-type: none"> <li>■ IP64 according to EN/IEC 60079-0 (ATEX/IECEX)</li> <li>■ IP65 according to EN/IEC 60529 (industrial standard)</li> <li>■ MIL-STD 810G certified (drop, shock, vibration, rain, dust, altitude, freeze/thaw, high/low temperature, temperature shock, humidity) MIL-STD 461 certified (conduction, radiation, conducted susceptibility, radiated susceptibility)</li> <li>■ ANSI/ISA 12.12.01-2000, Class I, Division 2</li> <li>■ 4' drop 26 faces</li> </ul>
<b>Environment</b>	<p>Operating temperature: -10°C to +55°C (14°F to 131°F)</p> <p>Storage temperature: -10°C to 55°C (14°F to 131°F)</p> <p>Humidity operating: 5 % to 95 %</p>
<b>Operating system</b>	Windows® 10 Pro (64 Bit)
<b>CPU</b>	Intel® Core™ i5-8250U (8th Gen.) 1.6 GHz processor with Turbo Boost Technology up to 3.4 GHz, 6 MB cache
<b>Memory</b>	One DDR4 socket for 8 GB
<b>Storage</b>	M2-SATA SSD 256 GB (extended temperature range)
<b>Display</b>	<ul style="list-style-type: none"> <li>■ 29.46 cm / 11.6" (1,920 × 1,080) FHD LCD Panel</li> <li>■ Capacitive Multi-Touch</li> <li>■ Optical, sunlight-readable display</li> </ul>
<b>Audio</b>	<ul style="list-style-type: none"> <li>■ Speaker x 1/70 dB</li> <li>■ Microphone x 1</li> </ul>
<b>Camera</b>	<ul style="list-style-type: none"> <li>■ 2 MP front-facing camera</li> <li>■ 5 MP rear camera with flashlight</li> </ul>
<b>Communication</b>	<ul style="list-style-type: none"> <li>■ WWAN LTE + GPS Combo (optional)</li> <li>■ Intel Wireless AC9260 802.11 a/b/g/n/ac</li> <li>■ Bluetooth® 5.0</li> </ul>
<b>Data collection</b>	<ul style="list-style-type: none"> <li>■ Optional 1D/2D barcode scanner</li> </ul>
<b>VO ports</b>	<ul style="list-style-type: none"> <li>■ Two USB 3.0</li> <li>■ One headphone out/mic- in jack</li> <li>■ One docking connector</li> <li>■ One expansion connector for expansion modules</li> <li>■ Two RF pass-through connectors for WWAN and GPS</li> </ul>
<b>Expansion slots</b>	<ul style="list-style-type: none"> <li>■ One microSD card slot support SDHC and SDXC</li> <li>■ One SIM card slot for WWAN data communication</li> </ul>
<b>Button</b>	<ul style="list-style-type: none"> <li>■ Power</li> <li>■ Volume</li> <li>■ Windows touch button</li> <li>■ Barcode/camera touch button</li> <li>■ Programmable touch button</li> </ul>
<b>Battery</b>	<ul style="list-style-type: none"> <li>■ One 3,950 mAh Li-polymer battery pack: 7 hrs</li> <li>■ Optional (spare part) 7,800 mAh Li-polymer battery pack: 14 hrs</li> </ul>
<b>AC adapter</b>	19 V/3.42 A/65 W
<b>Dimensions</b>	298 mm × 192 mm × 20 mm
<b>Weight</b>	1.2 kg

# Peripherals for Use in Hazardous Areas



**Remote Speaker Mic  
RSM-Ex 01**



**Ex Camera  
CUBE 800**



**Bluetooth® Headset  
SM1P**



**Scanner  
Ident-Ex® 01**



**BLE Beacon  
Loc-Ex® 01**

CUBE 800

# Intrinsically Safe Wearable Camera for Zone 1/21 and Div. 1

## Tailored for Hazardous Areas

Designed for safe operation in Ex-certified and rugged environments, the CUBE 800 brings hands-free collaboration to the world's toughest locations.

Dual cameras allow users to choose between optical and thermal camera modes. The integrated thermal imaging camera provides infrastructure health analysis and trending information, while the optical camera provides HD video and images. An integrated light ring provides high-quality visuals even in low light conditions and with the laser pointer the user knows exactly where the camera is aligned.

## Optimized for Remote Collaboration

The CUBE 800 can be used to share live videos and images via the Onsight platform or store them locally. Simply pair the

CUBE 800 to an Onsight Connect -enabled mobile device such as the Smart-Ex<sup>®</sup> 02.

During a live Onsight session, remote participants can control camera settings including zoom and camera modes. Remote control allows for a completely hands-free experience for workers.

With the new body-heat mode the CUBE 800 can be used for temperature screenings and non-contact temperature measurements of groups and individuals. Now it is possible to also check people for increased body temperature.

Using the body-heat mode, relative temperature differences within  $\pm 0.625^{\circ}\text{C}$ , or  $\pm 1.125^{\circ}\text{F}$ , can be made visible.



## Thermal Imaging Camera

- Longwave infrared, 8–14  $\mu\text{m}$
- < 50 mK thermal sensitivity
- Auto flat field correction (FFC)
- Typical measurement accuracy: \*  
Greater than  $\pm 5^\circ\text{C}$  or 5% where scene temperature =  $-10^\circ\text{C}$  to  $+120^\circ\text{C}$   
Greater than  $\pm 10^\circ\text{C}$  or 10% where scene temperature =  $+120^\circ\text{C}$  ...  $+450^\circ\text{C}$

## Communication

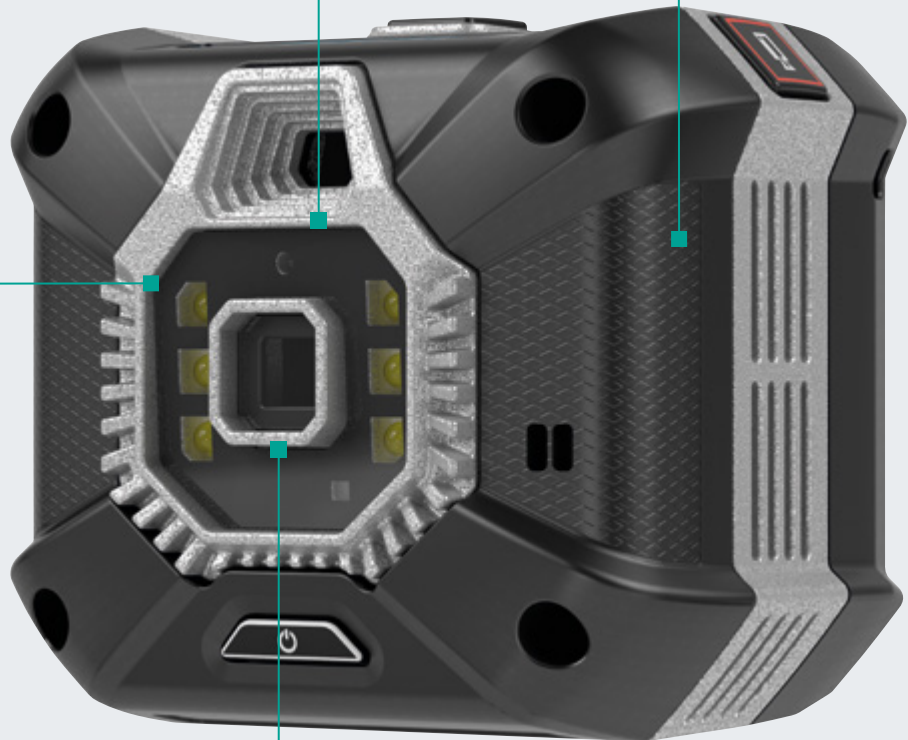
- Configuration and live collaboration using Onsite Connect software iOS 11 for Android™ 5.0 (Lollipop) or higher
- Integrated IEEE 802.11 a/b/g/n
- Dual-band WiFi (2.4 GHz and 5 GHz)
- Bluetooth® 4.1 (LE) for pairing to host device
- Direct WiFi connection to the host phone

## Power

- Rechargeable 2,200 mAh Li-ion battery
- 5 V DC, 1.8 A AC adapter
- Charging from any standard USB port
- Magnetic charging connector
- Up to 4 hours of runtime, depending on media and illumination settings

## Storage

- 48 GB onboard storage



## Optical Performance

- 13 MP camera (3  $\times$  digital zoom)
- Focus range (10 cm to infinity)
- Automatic focus and white balance
- Integrated LED light field
- Class 1 laser pointer

## Highlights



Certifications for ATEX/IECEx Zone 1/21 and Div. 1



Flexible design for mounting on a helmet, handheld, or monopod for hands-free operation



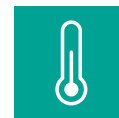
Allows remote working with experts via Onsite Connect



Compatible with mobile devices such as the Smart-Ex® 02



Dual camera system with HD optics and thermal imaging technology



Storage greater than 3 months maximum  $+45^\circ\text{C}$

## Technical Data: CUBE 800

<b>Optical performance</b>	<ul style="list-style-type: none"><li>■ 13 MP camera (3 × digital zoom)</li><li>■ 10 cm to infinity focus range</li><li>■ Automatic focus and white balance</li><li>■ Integrated LED light field</li><li>■ Class 1 laser pointer</li></ul>
<b>Thermal imaging camera</b>	<ul style="list-style-type: none"><li>■ Longwave infrared, 8–14 μm</li><li>■ &lt; 50 mK thermal sensitivity</li><li>■ Auto flat field correction (FFC)</li><li>■ Typical measurement accuracy: * Greater than +/- 5°C or 5% where scene temperature = -10°C to +120°C Greater than +/- 10°C or 10% where scene temperature = +120°C to +450°C</li></ul>
<b>Audio</b>	<ul style="list-style-type: none"><li>■ Built-in omni-directional microphone for ambient sound</li><li>■ Built-in speaker for CUBE status alerts</li></ul>
<b>Video standard</b>	<ul style="list-style-type: none"><li>■ H.264/AVC</li><li>■ HD capture and stream up to 1,080-pixel resolution</li><li>■ Frame rates up to 30 fps</li></ul>
<b>Communication</b>	<ul style="list-style-type: none"><li>■ Configuration and live collaboration using Onsite Connect software iOS 11 for Android™ 5.0 (Lollipop) or higher</li><li>■ Integrated IEEE 802.11 a/b/g/n</li><li>■ Dual-band WiFi (2.4 GHz and 5 GHz)</li><li>■ Bluetooth® 4.1 (LE) for pairing to host device</li><li>■ Direct WiFi connection to the host phone</li></ul>
<b>Media capture and storage</b>	<ul style="list-style-type: none"><li>■ 48 GB onboard storage</li><li>■ USB cable for file transfer</li></ul>
<b>Security</b>	<ul style="list-style-type: none"><li>■ WLAN network authentication: WPA, WPA2, WPA-PSK, WPA2-PSK, open</li><li>■ WLAN data encryption: AES, WEP, TKIP, or disabled</li><li>■ 802.1x authentication: PEAP</li><li>■ AES-256 media encryption for file storage</li></ul>
<b>Rugged features</b>	<ul style="list-style-type: none"><li>■ 6' drop to concrete at 20°C</li><li>■ 75 mm (W) × 64 mm (H) × 50 mm (D)</li><li>■ IP64</li><li>■ Weight: 257 g</li></ul>
<b>Operating temperature</b>	<ul style="list-style-type: none"><li>■ Optical camera: -20°C to +55°C</li><li>■ Thermal imaging: -10°C to +55°C</li></ul>
<b>Storage temperature</b>	<ul style="list-style-type: none"><li>■ -30°C to +60°C* (greater than 3 months max. +45°C).</li></ul>
<b>Humidity (noncondensing)</b>	<ul style="list-style-type: none"><li>■ Short-term storage (up to 3 months) minimum 5%, max. 85%</li><li>■ Operating minimum 5%, maximum 95% RH</li></ul>
<b>Altitude</b>	<ul style="list-style-type: none"><li>■ Storage (12°C) minimum 0 ft, maximum 15,000 ft</li><li>■ Operating (27°C) minimum 0 ft, maximum 10,000 ft</li></ul>
<b>Power</b>	<ul style="list-style-type: none"><li>■ Rechargeable 2,200 mAh Li-ion battery</li><li>■ 5 V DC, 1.8 A AC adapter</li><li>■ Charging from any standard USB port</li><li>■ Magnetic charging connector</li><li>■ Up to 4 hours of runtime, depending on media and illumination settings</li></ul>

\* Depends on usage and environmental conditions



Ident-Ex® 01

# Intrinsically Safe Barcode Scanner and RFID Reader

## Modular Head Design

Using a unique modular design, Ident-Ex® 01 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-approved service centers.

For an overview of all currently available head modules, please have a look at the Ident-Ex® 01 configurator at [www.ecom-ex.com](http://www.ecom-ex.com)

ecom's Smart-Ex® Watch 01 based on the Samsung Galaxy Watch is the first smartwatch for Zone 2/22 and Division 2.





**Scan**

**Performance**

- RFID <sup>1</sup> = up to 1.5 m
- Barcode = 15 cm to 15 m

**Bluetooth®**

- Class II, up to approx. 10 meters

**Internal Storage**

- Offline batch mode  
2 MB, 2D QR barcodes = 500+  
RFID tags (ID only) = 500+

**Power**

- Li-ion rechargeable; 12+ hours;
- 10,000+ scans with one battery charge



<sup>1</sup> Dependent on tag and environment

**Highlights**



Global certifications for Zone 1/21 and Div. 1



Powerful battery for 12-hour shifts



Flexible on- and offline scanning and changeable head modules



Can be connected via Bluetooth® to any device



Rugged design and easy to use

## Technical Data: Ident-Ex® 01

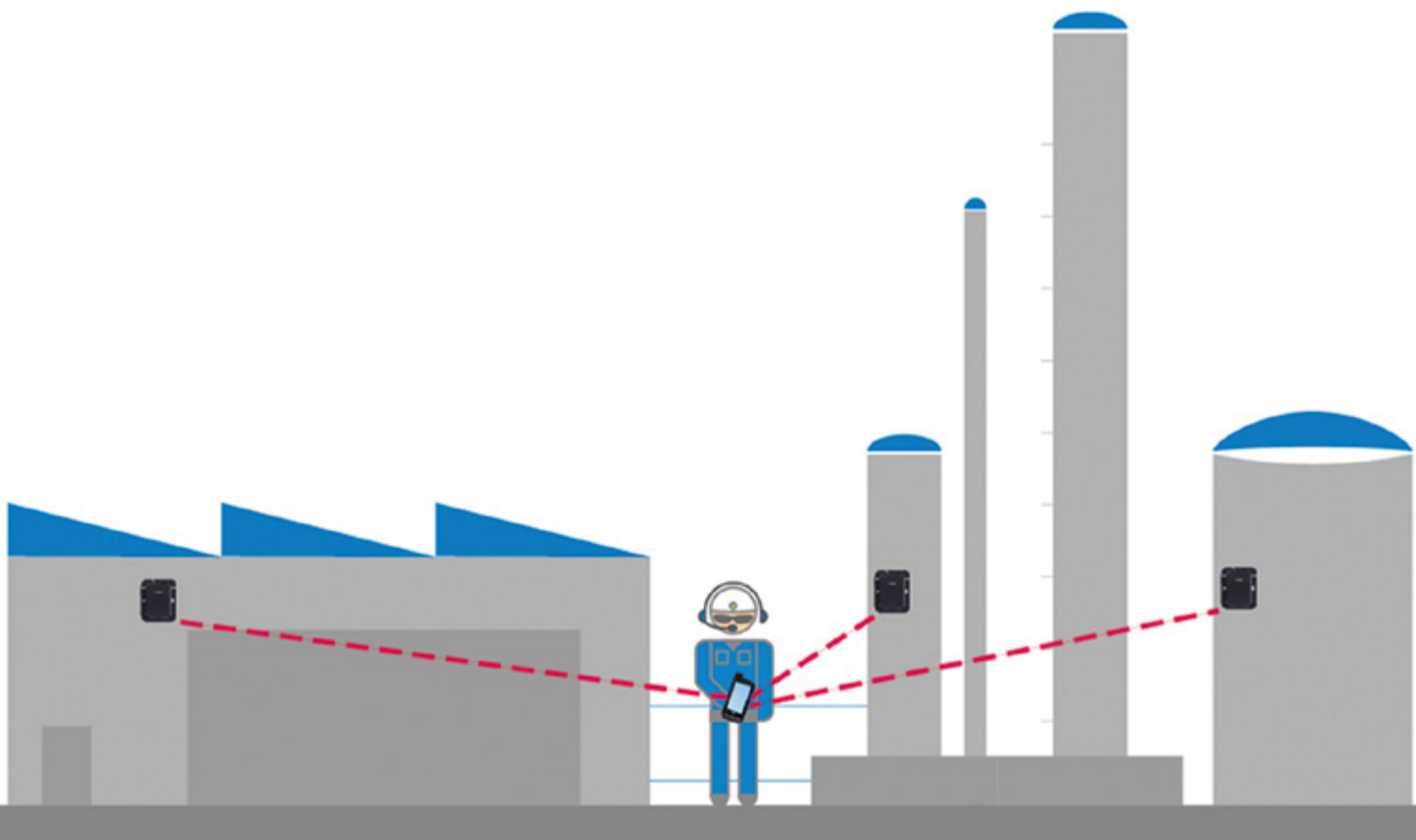
<b>Dimensions</b>	235 × 84 × 58 mm (with Ex-25 head module) 221 × 84 × 58 (remaining head modules)
<b>Weight</b>	425 g to 560 g (depends on head module)
<b>Battery</b>	Li-ion rechargeable; 12+ hours; 10,000+ scans with one battery charge
<b>Operating temperature</b>	-20°C to +50°C
<b>Internal storage</b>	Offline batch mode 2 MB, 2-D QR barcodes = 500+ RFID tags (ID only) = 500+
<b>Bluetooth®</b>	Class II, up to approx. 10 meters
<b>Scan performance</b>	RFID <sup>1</sup> = up to 1.5 m Barcode = 15 cm to 15 m

<sup>1</sup> Dependent on tag and environment

## Head module

<b>EN-EX25-A</b>	2-D barcode imager
<b>NL-TLB30-B</b>	125/134 kHz LF RFID, air coil
<b>NF-TLB30-B</b>	125/134 kHz LF RFID, ferrite antenna
<b>NH-UNI13-B</b>	13.56 MHz HF RFID
<b>NE-UNI900-A</b>	868 MHz UHF RFID
<b>NU-UNI900-A</b>	915 MHz UHF RFID
<b>NT-LID-B</b>	TROVAN LF RFID R/W Module
<b>ZN-SE965-A</b>	1-D Laser Barcode Scanner
<b>ZL-SE965-TLB30-A</b>	Combi Module 1-D Barcode + LF RFID, air coil
<b>ZF-SE965-TLB30-A</b>	Combi Module 1-D Barcode + LF RFID, ferrite antenna
<b>ZH-SE965-UNI13-A</b>	Combi Module 1-D Barcode + HF RFID
<b>ZT-SE965-LID-A</b>	Combi Module 1-D Barcode + Trovan

# Intrinsically Safe Bluetooth® Beacon



## Description

BLE beacons are small radio beacons that emit a signal at periodic intervals. The Bluetooth® 4.0 standard makes the beacons compatible with most smartphones and tablets, and they can be recognized at distances up to 200 m (geolocation).

Mobile devices can evaluate beacon signals and interact with the user or other programs by using special applications. They can be mounted directly onto a suitable surface or with the optional mounting base.

## For Use Inside and Outside of Hazardous Areas

The beacons are available for ATEX/IECEx Zone 1/21 and Div. 1 (Loc-Ex® 01). Their UV-resistant housing makes it possible for them to be used indoors and outdoors.

## Benefits

- Indoor localization
- Lone worker protection
- Physical access control
- Guard control system
- Guiding visitors
- BLE beacon as replacement for NFC beacon



## Highlights



Certifications for ATEX/IECEx Zone 1/21 and Div. 1



Operating parameters can be programmed remotely



Rugged, UV-resistant housing with IP64 rating



Compatible with Bluetooth® Low Energy from version 4.0



Up to 30 m range inside and up to 200 m outside buildings



Open firmware for individual BLE profile development

**Technical Data: Loc-Ex® 01**

<b>Operating temperature</b>	-20°C to +55°C
<b>Storage temperature</b>	-30°C to +30°C
<b>Power supply</b>	2 × LS14500
<b>Operating time</b>	Approx. 4 years
<b>Transmission power</b>	Max. 8 dBm
<b>Dimensions</b>	48 × 111 × 102 mm (H × L × W)
<b>Weight</b>	Approx. 180 g (with batteries)

RSM-Ex 01

# Remote Speaker Microphone for Use in Hazardous Areas

## Effective Communication in Harsh Environments

The RSM-Ex 01 comes with an IP65/67 rating and a built-in noise-reduction function. It provides clear, high-volume audio (up to 103 dB). The RSM is intuitive and easy to use, even when wearing gloves.

The new 3.5 mm plug is intended for industrial applications and offers a rugged design, a safety screw for attaching the plug to a smartphone, and compatibility with current and future ecom products.

Additional headsets can be connected using the standard 3.5 mm plug.





### Power

- Li-ion 2,200 mAh

### Buttons

- PTT button operable with thick gloves
- Front-facing multifunction button
- Volume up/down
- Red button (optional)

### Loudspeaker Performance

- Up to 103 dB

## Highlights



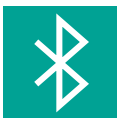
Global certifications for Zone 1/2/1 and Div. 1



Extremely long operating times with high voice volume—up to 78 hours



Outstanding volume and sound performance—up to 103 dB



Wired connection or wireless (Bluetooth® version planned)



Rugged design and easy to use



Good operability, even with gloves

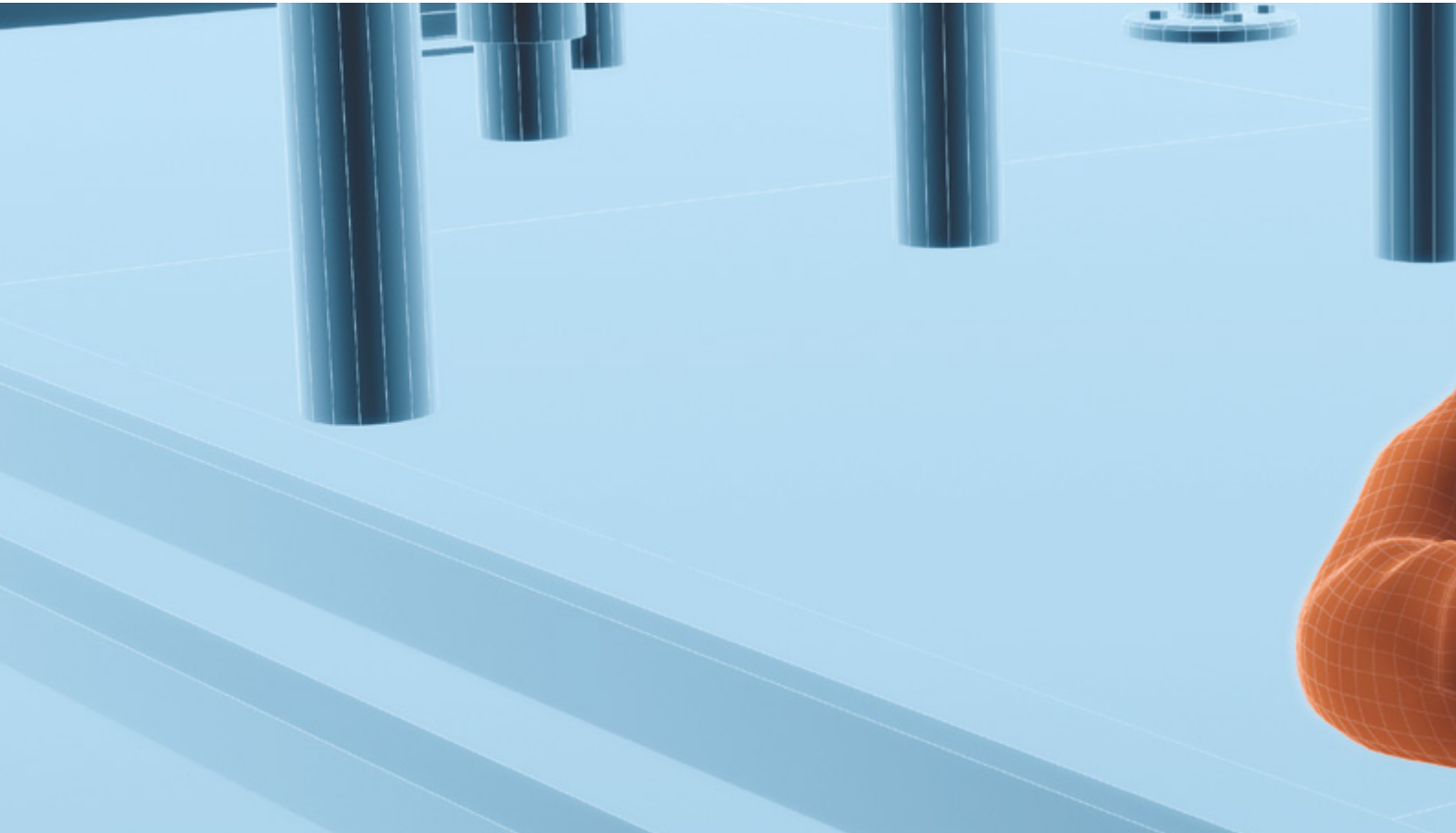


## Technical Data: RSM-Ex 01

<b>Loudspeaker performance</b>	Up to 103 dB			
<b>Power supply</b>	Li-ion 2,200 mAh			
<b>Charging</b>	Charging cable and docking station with magnetic charging plug: similar concept to Smart-Ex® 02 or Ident-Ex® 01. A Docking station without any electronics and a mounting option for the charging plug. Optical charging level indication (multiple LEDs)			
<b>Plug</b>	3.5 mm 4-pin headset jack with locking mechanism for Smart-Ex® 01/201 and Ex-Handy 09 / 209 versions 3.5 mm 4-pin headset jack with locking mechanism for ecom next-generation phones (Ex-Handy 10; Smart-Ex® 02) 3.5 mm 4-pin headset jack for standard Android and Windows devices			
<b>Buttons</b>	PTT button operable with thick gloves Front-facing multifunction button Volume up/down Red button (optional)			
<b>Features</b>	Lone worker ready (optional SOS button) IOT ready (4 standard Google intents usable and/or optional 4 additional Android intent) Built-in NFC Technology			
<b>Run times</b>	<b>Use time in % with typical user profiles</b>	<b>Noisy areas with sound level above 100 dB</b>	<b>Noisy areas with sound level between 84 and 100 dB</b>	<b>Noisy areas with sound level up to 84 dB</b>
	5 / 5 / 90	-> 47 h	-> 60 h	-> 78 h
	25 / 25 / 50	-> 16 h	-> 27 h	-> 45 h
	50 / 50 / 0	-> 9 h	-> 16 h	-> 30 h
		Highest noise level (8/8)*	Very high noise (4/8)*	High noise level (2/8)*
	* There are 8 different volume levels possible. ** Determined runtimes on the Smart-Ex® 01 based on RSM-Ex 01 software version V 16			
<b>Standby time</b>	Approx. 80 hours after commissioning via the 3.5 mm jack of an Android or Windows device			
<b>Temperature range</b>	-20°C to +55°C			
<b>IP rating</b>	IP 64 following EN/IEC 60079-0 (ATEX/ IECEx) IP 65/67 following EN/IEC 60529 (industrial standard)			

Comprehensive Solutions

# **Digitalizing hazardous areas. Enabling connectivity. Enhancing mobility.**



The Pepperl+Fuchs brand ecom is a leading manufacturer of comprehensive solutions for intrinsically safe mobile computing and industrial communication in hazardous areas.



Since 1986, ecom has played a key role in pioneering explosion protection for mobile devices. The company has demonstrated its technological expertise with a number of innovations and tried-and-tested mobile solutions—from intrinsically safe smartphones, cell phones, and tablets to accessories like wireless headsets and barcode scanners. ecom's new Digital Products and Services platform completes the portfolio, offering automated staging during device production, mobile device management, and device analytics; the platform can also be used as a full-fledged enterprise mobility management system.

Each of ecom's solutions combines uncompromised security with the highest level of functionality, and includes all necessary approvals and certificates for global use. A global sales and support network with service centers in Germany, the US, Singapore, and the United Arab Emirates completes the range of products.

Customers around the world know the Pepperl+Fuchs Group as a pioneer and innovator in electrical explosion protection and sensor technology. Building on decades of experience and technical leadership, the company develops components and solutions tailored to the needs of its customers. Solutions for mobile safety and communication from the Pepperl+Fuchs brand ecom allow customer applications to be digitalized quickly and easily. This opens up completely new possibilities and increases the safety, efficiency, and transparency of operations in both conventional and Industry 4.0 applications.

For more information about ecom, visit:

[www.ecom-ex.com](http://www.ecom-ex.com) and [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

# Your automation, our passion.

## Explosion Protection

- Intrinsic Safety Barriers
- Signal Conditioners
- FieldConnex® Fieldbus Infrastructure
- Remote I/O Systems
- Electrical Explosion Protection Equipment
- Purge and Pressurization Systems
- HMI Systems
- Mobile Computing and Communications
- HART Interface Solutions
- Surge Protection
- Wireless Solutions
- Level Measurement

## Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- Industrial Ethernet
- AS-Interface
- IO-Link
- Identification Systems
- Displays and Signal Processing
- Connectivity

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