

## Ascom d81 DECT Handset, Messenger (intrinsically safe)

### Features

#### Messaging

- Priority handling of calls and messages
- Advanced messaging queueing
- Color messaging
- 180 degrees rotation of message/call information
- Interactive messaging
- Broadcast/Multicast messaging
- Message acknowledgement
- Sending/receiving messages (SMS)
- Voice mail

#### Location

- Base station location
- DECT location<sup>1</sup>
- LF Location<sup>2</sup>
- Poll location

#### General

- ATEX/IECEx classified handset
- Tough industrial handset
- IP65 classified design
- Easy registration
- Headset connector
- Wide temperature range, -10 to 40 °C
- Loud volume
- Customizable sounds

- Color display
- Enhanced DECT security Step A (ETSI EN 300 444, N.35)
- GAP/CAP compliant DECT handset
- Dynamic output power
- Shared phone<sup>1</sup>
- Upgradeable by license
- 18 default languages + 1 customizable
- Application controlled telephony Automation calls
- Automatic group calls
- Push to talk (PTT)
- Personalized menu
- Advanced user profiles
- System profiles
- Procedure call
- Programmable handset restrictions
- Programmable soft keys / hot keys
- Programmable headset button
- Bluetooth and handsfree as standard
- Bluetooth barcode reader support<sup>1</sup>

1. License dependent feature

2. Factory option



## Technical Specifications

### Physical

Dimensions (l × w × d):	142 × 56 × 25 mm
Weight:	175 g (battery and clip included)
Material:	Case: PC/ABS, Key pad: PC, Clip: PA
Color:	Handset: Gray/Dark Gray Front plate: Yellow
Display (w × h):	28 × 35 mm, CSTN display
Clip:	Hinge-type (standard) or swivel-type

### Battery

Type:	Li-Ion
Speech time:	18 h (Bluetooth disabled/Location features disabled) 10 h (with Bluetooth headset in use/Location features disabled) 16 h (Bluetooth disabled/LF location enabled) 10 h (with Bluetooth headset in use/LF location enabled)
Stand-by time	80 h (Black screen saver activated/Location features disabled) 60 h (Black screen saver activated/LF location enabled)
Charge time:	2 hours - 90% charged; 3 hours - fully charged.
Discharge/charge cycles:	>=80% capacity left after 400 full charge/discharge cycles.
Storage temperature: <sup>1</sup>	0°C to +20°C. Cool and dry place. Charged to 40% (3.7V). Even when stored under optimal conditions the battery capacity will decrease over time

1. Note that storing Li-Ion batteries at high temperature dramatically reduces its capacity. For example storage around +60°C reduces capacity with 20% in less than a month, permanently.

### Connectors

Multi-purpose connector:	For battery charging, software download, connection of headset, and configuration.
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### User interface

Display (w × h):	Multiple colors with high resolution, more than 65000 individual colors. 128 × 160 pixel LCD with white LED backlighting.
Indicator:	LED on top for visual indication of incoming call/message. The LED may also be used for visual indication of normal function.
Vibrator:	Incoming call/message
Buttons/Keypad:	- Soft keys (3) - Hook off key - On-hook and Power On/Off on the same key - Four-way navigation key - Numerical keys - Volume up/down buttons - Sound off key/Mute button

*Specifications are subject to change without notice.*

## Audio

Ring signal:	Adjustable in 8 steps
Earpiece:	Adjustable in 8 steps
Maximum sound ring signal level:	90 dBspl @ 10 cm
Loudspeaker:	Duplex loud speaking function

## Settings

Menu and Message Languages:	18 (Czech, Danish, German, Greek, English, Spanish, French, Italian, Magyar, Dutch, Norwegian, Polish, Portuguese (Brazilian), Russian, Slovakian, Finnish, Swedish, Turkish) + 1 customizable
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NOTE: The full set of message languages are supported only if UTF-8 character encoding is used. Other character encodings have limited language support.

## Central Phonebook

Maximum name and number length:	40 characters in a name and 20 digits in a number
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## Company Phonebook

Maximum name and number length:	24 characters in a name and 24 digits in a number (1 number per name).
Entries:	1000

## Local Phonebook

Contacts:	<ul style="list-style-type: none"><li>- 48 character name</li><li>- 24 digit work number</li><li>- 24 digit mobile phone number</li><li>- 24 digit other number</li><li>- Selectable ring tones per contact</li></ul>
Entries:	250

## Telephony

Indication:	14 ring signals, flashing LED and vibrator
Answer call:	Button press or auto answer
Call list storage capacity:	25 calls (received, dialled and missed) with time stamp

## Messaging

Maximum message length:	Up to 140 characters from handset, depending on language and system settings.
Storage capacity:	30 received/sent messages (> 20 000 characters)
Maximum number of Multicast Groups per handset:	The handset can be a member in maximum 8 different Messaging groups
Message character encoding	SMS Standard Latin-1 UTF-8

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## Radio

Receiver sensitivity:	-93 dBm
Automatic DECT protocol detection:	Automatic detection and configuration for US DECT and EU DECT at first registration.
Frequency range:	
1880-1895 MHz	Taiwan
1880-1900 MHz	Europe, Africa, Middle East, Australia, New Zealand, and parts of Asia
1900-1906 MHz	Thailand
1910-1930 MHz	South America
1920-1930 MHz	North America
Modulation:	GFSK
Channel spacing:	1.728 MHz
Antenna:	Integral
Dynamic output power:	EU/LA/BR: 10 mW (maximum average power) US: 4 mW (maximum average power)

## Bluetooth

Bluetooth radio spectrum:	ISM 2.4000-2.4835 MHz
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## Environmental

Operating temperature:	-10°C to +40°C (+14°F to +104°F)
Storage temperature:	-20°C to +60°C (-4°F to +140°F)
Charging temperature:	+5°C to +40°C (+41°F to +104°F)
Enclosure protection:	IP65 <sup>1</sup> , IEC EN60529
Immunity to electromagnetic fields:	10V/m EN61000-4-3
Immunity to ESD:	8 kV contact discharge and 16 kV air discharge (EN61000-4-2)

1. Sira has tested the enclosure to IP64. IPX5 marking is based on Ascom tests and is not validated by Sira.

## Accelerated Life Testing

Climate stress	Handset exposed for quick temperature changes (-40° C to 75° C) 25 times. Handset dwelt on each temperature during 40 minutes.
Drop test	Handset dropped 30 times from 1,2 metres
Vibration test	Handset exposed for vibrations during 2,5 hours
Chemical stress	Handset exposed for Oleic Acid
Keypad actuation test	Keys pressed 15 000 times with a force of 13N
Squeeze test	Handset squeezed 1 000 times with a force of 130N.

## Other Tests

Free fall test	IEC 68-2-32, procedure 1, dropped 12 times from 1 meter, specification extended to 2 meters.
Chemical Resistance Test	3% Hydrochloric Acid M-alcohol (85% methylated ethanol) 60% Chlorhexidin 0.5mg/ml
Keypad Abrasion Test	20 NB 0500-B

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### Additional Features

- High quality voice
- Easy access to PBX services
- Easy replacement of handset
- Mute button / Sound off key
- Local, central, and company phonebook
- Site survey tool
- Loudspeaking function
- Vibrator
- Clear call lists in charger
- Call list with the last 25 calls
- Site survey tool
- Centralized management

### Accessories

NOTE: In hazardous area, it is only permitted to use EX classified accessories.

- Hinge-type/Swivel-type clip
- Cover plate for no clip
- Security cord
- Leather casing, incl. swivel-type clip
- Desktop charger, Basic
- Desktop charger, Advanced
- Charging rack
- ATEX/IECEx-classified headset adaptor for standard Peltor headset and ATEX-classified Peltor headsets

### Verified Bluetooth Headsets and Bluetooth Barcode Readers

NOTE: In hazardous area, it is only permitted to use EX classified Bluetooth headsets/Bluetooth barcode readers.

#### Bluetooth Headsets:

- 3M Peltor WS XP
- Jabra EVOLVE 65
- Jabra MOTION
- Jabra STEALTH
- Jabra SUPREME
- Plantronics BlackBeat GO 2
- Plantronics Blackwire 710
- Plantronics M70
- Plantronics M90
- Plantronics ML20
- Plantronics Voyager Edge
- Plantronics Voyager Legend
- Voyager 5200 BT Headset EU
- B825-M Voyager Focus
- Explorer 500 Bluetooth Headset Black

#### Bluetooth Barcode Readers:

- Baracoda ScanWear BSW-L
- Baracoda Roadrunners BRR-L
- Baracoda Pencil2
- Opticon OPL-2724

### Intrinsically safe use

Disclaimer: Explosive atmosphere; The approvals are valid exclusively for surface industry. Ascom explosion protected d81 handset shall therefore not be used in mining (underground) location. Ascom Sweden AB does not support or take responsibility for any change in the product or its designation. Battery charging or replacement of battery is NOT permitted in hazardous area.



SIRA 10ATEX2072 IECEx SIR 10.0038  
II 2G, II 2D Ex ib IIC T4 Gb Ex ib IIIC T55°C Db IP65  
Tamb= -10° C to +40° C



2011 2368858 I.S. for Class I, Zone 1 IP64  
AEx ib IIC T4 Gb, Ex ib IIC T4 Gb  
Tamb= -10° C to +40° C

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НАННО ЦСВЭ TU RU-C-SE.ГБ05.В.00744  
1Ex ib IIC T4 Gb X  
Ex ib IIIC T55°C Db

### Compliance to International Regulations and Standards


IECEX Scheme: IEC 60079-0, IEC 60079-11 and IEC 61241-11

EC Type Examination Certificate, IECEX Certificate of Conformity, EC Declaration of Conformity and following supplements can be found at [http://www.ascom.com/ws/products\\_ws.htm](http://www.ascom.com/ws/products_ws.htm) and [www.iecex.com](http://www.iecex.com).


### Compliance to European Regulations and Standards

EU directives: 2014/53/EU (RED) and 94/9/EC (ATEX)  
Product marking:  BT QD: B016451  
Radio: EN 301 406, TBR22  
Bluetooth: EN 300 328, EN 301489-17  
SAR (Specific Absorption Rate): EN50360 and EN62209-1, 0.137 W/kg (10 gram)  
EMC: EN301489- 6, EN 301 489-1  
ATEX EN 60079-0, EN 60079-11 and EN 61241-11


### Compliance to US Regulations and Standards

Product marking: FCC ID: BXZDH5BL,  BT QD: B016451  
US: 9FVW4NANDH5  
HAC  
SAR (Specific Absorption Rate): FCC/OET Bulletin 65 Supplement C and IEEE Std. 1528 / ANSI/IEEE Std. C95.1  
Normal operation 0.013 W/kg (1 gram)  
Body worn operation 0.016 W/kg (1 gram)  
Safety: UL 60950-1  
EMC/Radio: FCC Part 15 D, and FCC Part 15 C  
Hearing Aid: 47 CFR Part 68, Subpart D and TIA-968-A

### Compliance to Canadian Regulations and Standards


Product marking: IC: 3724B-DH5BL,  BT QD: B016451  
EMC/Radio: RSS-213 and RSS-210 (Bluetooth), ICES-003  
SAR (Specific Absorption Rate): IEEE Std C95.3  
Normal operation 0.013 W/kg (1 gram)  
Body worn operation 0.016 W/kg (1 gram)  
Safety: CSA 60950-1  
Hearing aid: CS-03

### Compliance to Australian Regulations and Standards

Product marking:  BT ID: B016451  
Radio: EN 301406  
Bluetooth: EN 300 328-2, EN 301489-17, AUS/NZS-4771  
SAR (Specific Absorption Rate): EN 50360 and EN 62209-1, 0.137 W/kg (10 gram)  
Safety: AUS/NZ 60950-1  
EMC: EN 301489- 6, EN 301 489-1  
DECT: AS/ACIF S004

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## Compliance to Russian Regulations and Standards

Product marking:	<b>EAC</b>  BT ID: B016451
Telecom/Radio	Corresponds to "Rules for the use of terminal equipment connected to the two-wire analogue interface of the general purpose telephone communication network", supplemented by Russian Ministry of Infocommunications regulation of 29.08.2005 in No. 102 (registered by Russian Ministry of Justice 02.09.2005, registration no. 6982).
Bluetooth:	EN 300 328-2 and EN 301489-17
Safety:	GOST R IEC 60950-1:2005
Sanatory:	MSanPin 001-96 "Sanitary norms of permissible levels for physical factors during use of domestic articles"; GN (Hygienic Norms) 2.1.6.1338-03 "Maximum Allowable Concentrations (MACs) of Pollutants in the Air of Residential Settings", SanPin 2.1.8/2.2.4/ 1190-03 "Hygiene requirements on the installation and implementation of terrestrial mobile radio communication systems".
EMC:	EN 301489- 6, EN 301 489-1
SAR (Specific Absorption Rate):	EN 50360 and EN 62209-1, 0.137 W/kg (10 gram)
EX:	GOST R IEC 60079 -0:2007, GOST R 52350.11-2005 (IEC 60079-11:2006), GOST R IEC 61241-11:2009

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