BARTEC

MC 9090ex-G Type B7-A229-0G.0/H.......
MC 9090ex-K Type B7-A229-0K.0/H.......

Mobile Computing

User Manual

MC 9090ex-G   Type B7-A229-0G.0/H.......
MC 9090ex-K   Type B7-A229-0K.0/H.......

User Manual

Mobile Computer MC 9090ex-G

Type B7-A229-0G.0/H…..

Mobile Computer MC 9090ex-K

Type B7-A229-0K.0/H…..

UL Version

Version 1.01
Document No. B1-A229-7D0002
INDEX A / Status: 11 March 2010

Technical data subject to change!

Before commissioning the devices, please read through the relevant documents carefully.

Target group:	Experienced and trained specialists acting in compliance with the NEC 500, IEC 60079-19 and IEC 60079-17.

This user manual contains important information, safety instructions and test certificates that are necessary for perfect functioning when operating and handling the Mobile Computer. If the information and safety instructions for the devices are not observed, its use to the intended purpose in hazardous (potentially explosive) zones can no longer be guaranteed.

Device modifications that are not expressly approved by BARTEC may invalidate the operating permit for the respective device. Non-conformance will also rule out claims under guarantee. The warranty will be rendered invalid if the delivered item is harmed because of inappropriate handling, excessive strain, inadequate servicing, abnormal operating conditions or transport damage. Natural wear is also excluded from warranty.

BARTEC reserves the right to alter the contents of the document without notice. No guarantee is given for the correctness of the information. In case of doubt the original German version of the safety information will apply because it is not possible to rule out errors in translation or in printing. In the event of a law case, the "General Terms and Conditions" of the BARTEC Group will apply in addition.

If any differences emerge between the contents in the documents from Motorola and those from BARTEC, the information in this Mobile Computer MC 9090ex user manual shall apply.

The respective up-to-date versions of data sheets, manuals and certificates may be downloaded from the "Ex Visualisation and Communication Systems" product page at www.bartec-group.com, or ordered directly from BARTEC GmbH.

Information from the Manufacturer SYMBOL/Motorola

No licence is granted explicitly or implicitly or by tacit permission or in any other way in the context of a patent right or a patent referring to a combination, a system, a device, a machine, material, a procedure or a process in which products from Symbol could be used. There is merely an implicit licence for devices, electrical systems and subsystems that are contained in Symbol/Motorola products.

Documentation

This document is available in English at present. Visit our web site http://www.bartec-group.com and find out about your special product.

Contents

1   Product Description

1.1   General

The MC 9090ex-G and MC 9090ex-K Mobile Computers each form a compact unit for high-standard barcode scanning in hazardous (potentially explosive) areas. The comfortably positioned scan trigger and the ergonomic design of the MC 9090ex device series allow the acquisition of data with one-hand operation.

The MC 9090ex device series is available in various versions.

MC 9090ex-G   **MC 9090ex-K**

Both the MC 9090ex-G Mobile Computer (Gun version) and also the MC 9090ex-K Mobile Computer (Brick version) allow data to be exchanged with the host system in real time.

The devices in the innovative MC 9090ex series are powerful hand-held mobile computers that combine the advantages of the Microsoft Pocket PC platform and the strengths of the Intel® XScaleTM PXA270 processor with 624 MHz.

They feature a large easy-to-read 1/4 VGA colour display with attractive touchscreen technology. The radio standard used is IEEE 802.11a/b/g (direct sequence).

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1.2   Use

The Mobile Computer is a hand-guided electrical device used for the mobile acquisition, processing and radio transmission of data in hazardous areas. The Mobile Computer is used in areas of Class I, II and III Div 2.

The MC 9090ᵉˣ series is specially intended for use in Class I, II and III Div 2, Group A, B, C, D, F and G.

It is not allowed to use the MC 9090ᵉˣ in Class I, II and III Div 1.

1.3   Advantages

- Data access is possible in real time
- Lithium-ion storage batteries allow maximum operating time between chargings
- WLAN radio technology IEEE 802.11a/b/g
- Bluetooth
- Additional memory with an SD card
- Different scan engines allow different barcode applications
- Replaceable keypads in 3 variants

2 Safety Instructions

2.1 Warnings about the Mobile Computers

W A R N I N G S

The device may not be opened by the user outside the hazardous area either! The user may not make any alterations to the device. Do not exchange or replace components and do not retrofit any components on internal plug connectors or slots. If components other than those specified are used, the protection against explosions can no longer be assured.

Exception: Keypad and SD card (see chapter 6.1 "Keypad and SD Card")

Substitution of components may impair non incentive.

To prevent ignition of flammable or combustible atmospheres disconnect power before servicing!

C A U T I O N

Do not open or charge the device and do not exchange any data through the "cradle contacts" on the battery in the hazardous area! Operating the 17-pin data interface (see chapter 3.5 "Technical Data Battery, Article "External Battery Contacts") is only permissible outside the hazardous area and only with devices specified by the manufacturer!

Protect the device from impact effects! Do not expose the operating equipment to any caustic/aggressive liquids, vapours or mist! In the event of malfunctioning or damage to the enclosure, take the equipment out of the potentially explosive atmosphere immediately, bring it into a safe area and decommission it by removing the battery!

If on account of adverse effects or conditions (e.g. penetration of water, fluids, exposure to temperatures outside the specified range etc.) there is a danger of not being able to operate the equipment safely, switch off the equipment instantly and remove the battery.

Avoid the influence of heat that is higher or lower than the specified temperature range (see chapter 3.2 "General Data"). Do not place the devices anywhere near sources of heat, such as for example heaters, air exit openings in air-conditioners, or near cookers or other devices (including amplifiers) that radiate heat.

Avoid the effects of moisture.

Do not put any objects into the device, into the enclosure or other openings in the Mobile Computer. Openings in the device may not be blocked, obstructed or covered.

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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A T T E N T I O N

Equipment that is damaged in any way or that does not function proberly must instantly be removed from the hazardous area and sent in for inspection/repair!

Take the device out of the hazardous areas before wiping it with a dry cloth or cleaning it!

General statutory regulations or directives on safety at work; accident prevention regulations and environmental protection legislation must be complied with, e.g. Ordinance on industrial health and safety (BetrSichV) or the national ordinances.

Ensure safe handling of the equipment during operation by making sure the device in a steady position and the user has sufficient space to move!

When transporting the equipment in vehicles, it must be placed in appropriate compartments or fittings so that it cans neither fall off during the drive nor be exposed to extreme vibrations.

The rules for hazardous areas (see NEC Article NFPA 70) must be observed. In particular, appropriate clothing and footwear should be worn in view of the risk of dangerous electrostatic charges. Do not wear rubber gloves or suchlike during operation!

2.2 Warnings for Battery

W A R N I N G

The battery may only be charged and changed outside the hazardous area!

It must be ensured that only original batteries of the type B7-A2Z0-0006 with 7.4 V/2200 mAh are used in safety-oriented operation. The use of imitation batteries or batteries from other manufacturers will render the type of ignition protection ineffective and there will then be a risk of fire or explosion.

Keep away from children.

The battery may explode if disposed of in fire.

DO NOT short circuit or disassemble battery.

C A U T I O N

The battery may only be used for the purposes stated in the user manual and is only suitable for use in the MC 9090ex-G and MC 9090ex-K (type B7-A229-xxxx).

If used incorrectly, there is a risk of burning. The battery should not be disassembled over a temperature higher than +50 °C (122 °F). If the battery is damaged, battery acid can escape from the cells and cause corrosion. For that reason, extreme care must be taken in handling and disposing of a damaged or leaking Li-ion battery.

Defective batteries must be disposed of immediately, whereby the battery disposal regulations that apply to the respective region must be observed.

2.3   Warnings about Laser Devices

Devices equipped with Symbol lasers conform to the US 21CFR1040.10 and 1040.11 and IEC 825-1: (Ed.2.0), EN 60825-1:2007 standards. The laser classification is marked on one of the labels on the device. Class 1 laser devices are rated not hazardous when used in the manner intended. The following declaration is required to comply with US and international regulations:

The use of controls and adaptations or procedures other than those specified in these instructions may lead to a hazardous exposure to laser radiation.

Class 2 laser devices operate with a visible low-voltage light diode. As with any bright source of light, for example the sun, the user should avoid looking directly into the light beam. Momentary exposure to a Class 2 laser is not considered harmful.

2.4   Notes on Installation

The relevant installation and operating regulations for electrical systems must be observed!
(e.g. NEC and special for the hazardous area, articel NFPA 70 as or the respective national ordinances)

The operator of an electric plant in a potentially explosive environment must keep the operating equipment in an orderly condition, operate it correctly, monitor it and do the required maintenance and repairs.

> The device can only be opened in the factory!
> The device is factory-sealed. Do not open!

Exception: Keypad and SD card (see chapter 6.1 "Keypad and SD Card")

Maintenance

When doing maintenance or servicing or when checking associated equipment, comply with the applicable regulations in accordance with directive IEC 60079-19 and IEC 60079-17!

Installation/dismantling, operating and maintenance work can only be carried out by trained specialists. Statutory regulations and other binding directives on workplace safety, accident prevention and environmental protection must be adhered to.

Observe the national waste disposal regulations when disposing the equipment.

Servicing

Regular servicing is not necessary if the equipment is operated correctly in accordance with the installation instructions and environmental conditions.

Inspection

In accordance with IEC 60079-19 and IEC 60079-17, the owner-operator of the electrical installations in potentially explosive areas has an obligation to have these installations checked by a qualified electrician to ensure that they are in a proper condition.

Repairs

Repairs on explosion-protected operating equipment can only be done by authorised persons using original spare parts and working in accordance with the latest developments of technology. The relevant applicable regulations must be observed. Please direct any questions you may have to BARTEC GmbH.

Installation Directives

The safety and accident prevention regulations applicable to the respective application must be adhered to. The units must be completely assembled before they may be operated.

Commissioning

Before commissioning the devices, check that all components and documents are there.
(Scope: 1 x MC 9090ex, 1 x Battery, 1 x Stylus, 1 x User Manual and 1 x Quick-Start Guide)

For **Software Installation** and **Adjustment Possibilities** refer to the Symbol/Motorola manual:

www.symbol.com under
- Support and Resources
- Product Manuals
- Mobile Computers
- MC 9090 WM

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2.5 Electromagnetic Fields

2.5.1 International

The device complies with internationally recognised standards covering human exposure to electromagnetic fields from radio devices.

Reducing RF Exposure - Use Properly

Only operate the device in accordance with the instructions supplied.

2.5.2 US and Canada

Portable Devices

This device was tested for typical body-worn operation. Use only BARTEC tested and approved belt clips, holsters, and similar accessories to ensure FCC Compliance. The use of third-party belt-clips, holsters, and similar accessories may not comply with FCC RF exposure compliance requirements, and should be avoided.

ℹ **The Mobile Computer must be switched off before it may be carried on the body.**

Co-located Statement

To comply with FCC RF exposure compliance requirement, the antenna used for this transmitter must not be co-located or operating in conjunction with any other transmitter/antenna except those already approved in this filling.

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2.6 Health and Safety Recommendations

Use only the accessories, batteries and battery chargers approved by BARTEC. Do not attempt to charge damp/wet Mobile Computers or batteries. All components must be dry before being connected to an external power supply.

2.6.1 Ergonomic Recommendations

- Reduce or eliminate repetitive motion

- Maintain a natural position

- Reduce or eliminate excessive force

- Keep objects that are used frequently within easy reach

- Perform tasks at correct heights

- Reduce or eliminate vibration

- Reduce or eliminate direct pressure

- Provide adjustable workstations

- Provide adequate clearance

- Provide a suitable working environment

- Improve work procedures

2.6.2 Vehicle Installation

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles (including safety systems). Check with the manufacturer or its representative regarding your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle.

An air bag inflates with great force. DO NOT place objects, including either installed or portable wireless equipment, in the area over the air bag or in the air bag deployment area. If in-vehicle wireless equipment is improperly installed and the air bag inflates, serious injury could result. Position your device within easy reach. Be able to access your device without removing your eyes from the road.

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2.7 Warnings for Use of Wireless Devices

Please observe all warning notices with regard to the usage of wireless devices.

2.7.1 Safety in Aircraft

Switch off your wireless device whenever you are instructed to do so by airport or airline staff. If your device offers a 'flight mode' or similar feature, consult airline staff as to its use in flight.

2.7.2 Pacemakers

If you have a cardiac pacemaker and are working with the Mobile Computer, you must maintain a minimum distance of 15 cm between a portable wireless device and the pacemaker to prevent any faults occurring in the pacemaker. These recommendations are consistent with independent research and recommendations by Wireless Technology Research.

Electromagnetic waves, such as occur with the MC 9090ex when using the WLAN or bluetooth functions can cause faults and endanger your health! As it is not possible at this point in time to make any definite statement with regard to the interference immunity of pacemakers, we recommend that people wearing pacemakers should in general refrain from handling radio systems (transmission operation)!

Persons with Pacemakers:

- Should ALWAYS keep the device more than 15 cm (6 inches) from their pacemaker when turned ON.
- Should not carry the device in a breast pocket.
- Should use the ear furthest from the pacemaker to minimize the potential for interference.
- If you have any reason to suspect that interference is taking place, turn OFF your device.

2.7.3 Hearing Aids

The wireless device may interfere with some hearing aids. In the event of interference you may want to consult your hearing aid supplier to discuss solutions.

2.7.4 Other Medical Devices

Please consult your physician or the manufacturer of the medical device, to determine if the operation of your wireless product may interfere with the medical device.

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2.7.5   Radio Frequency Interference Requirements-FCC
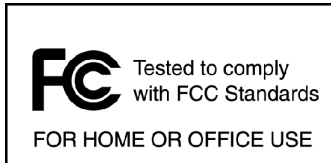
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

➡ Reorient or relocate the receiving antenna.

➡ Increase the separation between the equipment and receiver.

➡ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

➡ Consult the dealer or an experienced radio/tv technician for help.

Radio Transmitters (Part 15)

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1)   this device may not cause harmful interference, and

(2)   this device must accept any interference received, including interference that may cause undesired operation.

2.7.6   Radio Frequency Interference Requirements – Canada

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Radio Transmitters

This device complies with RSS 210 of Industry & Science Canada. Operation is subject to the following two conditions:

(1)   this device may not cause harmful interference and

(2)   this device must accept any interference received, including interference that may cause undesired operation.

Label Marking: The Term "IC:" before the radio certification only signifies that "Industry Canada" technical specifications were met.

3 Technical Data

3.1 Explosion Protection

Type	:	B7-A229-0G.0/H...... and B7-A229-0K.0/H.......
Ex protection type	:	Class I, II and III Div 2 Groups A, B,C, D, F and G T5
Certification	:	UL File No. E321557

3.2 General Data

Dimensions (height x width x depth)

Type B7-A229-0G.0/H....... Version "Gun"	:	231 mm x 91 mm x 193 mm	9.1 inch x 3.6 inch x 7.6 inch
Type B7-A229-0K.0/H....... Version "Brick"	:	231 mm x 91 mm x 56 mm	9.1 inch x 3.6 inch x 2.2 inch
Ambient temperature	:	-20 °C to +50 °C	-4 °F to 104 °F
Ambient temperature when charging	:	0 °C to +40 °C	32 °F to 104 °F
Storage temperature	:	-40 °C to +70 °C	-40 °F to 122 °F
		outside the hazardous area	
Air humidity	:	5 % to 95 % (not condensing)	
Protection class	:	IP 64	

Weight including battery

Type B7-A229-0G.0/H....... Version "Gun"	:	approx. 720 g	approx. 23 oz
Type B7-A229-0K.0/H....... Version "Brick"	:	approx. 680 g	approx. 22 oz
Display	:	3.8 inch ¼ VGA colour display	
		65536 colours	
		240 x 320 pixels	
Touch panel	:	Polycarbonate, analog resistive touch	
Processor	:	Intel® XScale Bulverde PXA270 processor with 624 MHz	
Operating system	:	Windows Mobile 2005 (English)	
Memory	:	ROM 128 MB RAM 128 MB	
optional extension with SD card	:	512 MB Order number 17-28BE-F006/0001	
		1 GB Order number 17-28BE-F006/0002	
		2 GB Order number 17-28BE-F006/0003	

Note:

The devices are modified to suit the selected memory versions. The end user can replace the SD card later himself, but must follow the instructions in chapter 6.1.4 "Inserting/Replacing the SD Card".

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Interfaces	:	RS232, max. 115.2 kbps, min. 1200 bps
		USB Vers. 1.1 (client)
Keypad versions	:	"Gun" version and "Brick" version

As an alternative, the 53-key version is also available with emulation key printing

28 keys   43 keys   53 keys

No emulation software is installed on the Mobile Computers with the emulation key version. The customer must order the emulation software separately from Symbol/Motorola and its distributors and install it himself.

The devices are modified to suit the selected keypad version. The end user can replace the keypad later himself.

When replacing the keyboard, follow the instructions in chapter 6.1.3 "Removing/Changing Keypad".

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3.3   Technical Data - Scan Engine and Decode Zone

3.3.1   Scan Engine for Type B7-A229-0GJ0/H......   (1D-Long Range Scan Engine)

Laser diode	:	Visible red light 650 nm
Scan rate	:	35 scans / sec. ± 5 (bi-directional)
Scan angle	:	13.5° ± 0.7°
Laser safety	:	Devices in CDRH Class II / IEC 825 Class 2

Decode Zone for MC 9090ex-G (1D-Long Range Scan Engine)

Note: Typical performance at 73.4 °F (23 °C)
on high quality symbols

Width of field

inch	cm
72	182.9
48	121.9
24	61.0
0	0
24	61.0
48	121.9
72	182.9

SE 1524

15.0 — 55 mil — 180.0
70 mil reflective — 367.0
100 mil reflective — 542.0

inch	0		120		240		360		480		600
cm	0		304.8		609.6		914.4		1219.2		1524.0

Distance from front of scanner

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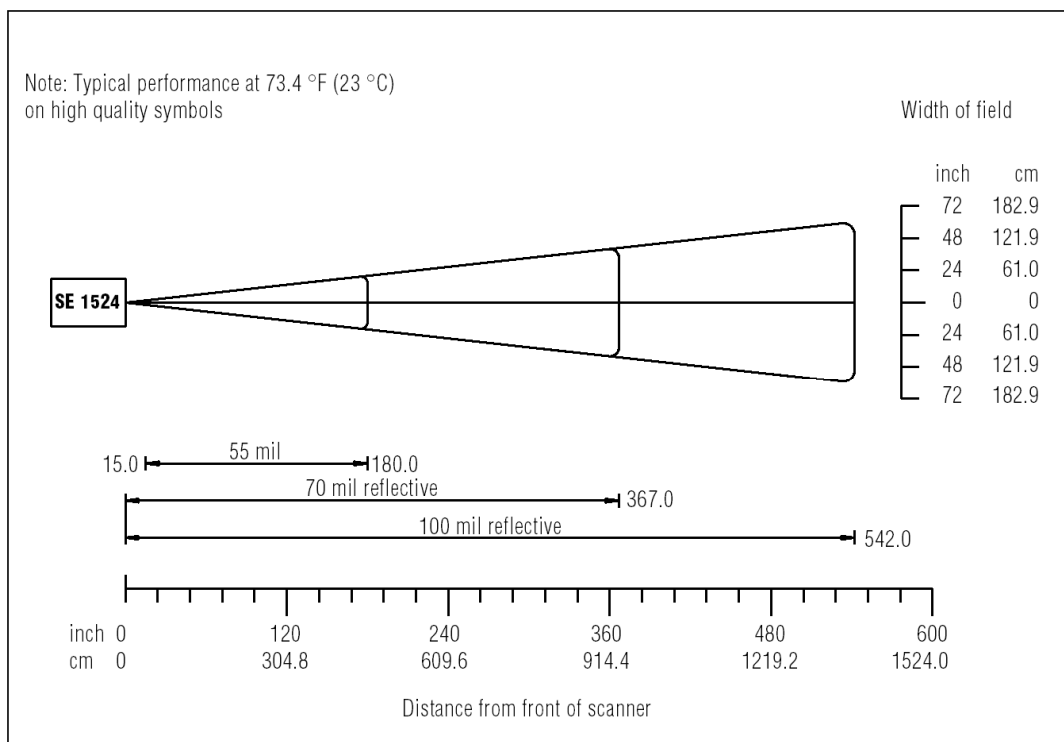
3.3.2 Scan Engine for Type B7-A229-0KA0/H...... (1D-Standard Range Scan Engine)

Laser diode	:	Visible red light 650 nm
Scan rate	:	104 scans / sec. ± 12 (bi-directional)
Scan angle	:	47° ± 3° standard
		35° ± 3° reduced
Laser safety	:	Devices in CDRH Class II / IEC 825 Class 2

Decode Zone for MC 9090ex-K (1D-Standard Range Scan Engine)

Note: Typical performance at 73.4 °F (23 °C) on high quality symbols

Width of field

	inch	cm
	24	51
	18	45.7
	12	30.5
	6	15.3
	0	0
	6	15.3
	12	30.5
	18	45.7
	24	51

SE 950

2.6 5 mil 6.9
2.2 7.5 mil 10.8
1.9 7.5 mil 14.3
2.1 100 % UPC 19
20 mil 25.1
40 mil 39.4
55 mil 44.8

* Minumum distance determined by barcode length and scan angle

inch	0	10	20	30	40	50
cm	0	25.4	50.8	76.2	101.6	127

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3.3.3   Scan Engine for Type B7-A229-0KK0/H.....   (1D-/2D-Imager Engine)

Illumination element (LED)	:	Visible red light 635 nm +/- 20 nm
Target element (VLD)	:	Visible red light 635 nm +/- 20 nm
Field of vision	:	Horizontal 32,2 °
		Vertical 24,5 °
Laser safety	:	Devices in CDRH Class II / IEC 825 Class 1
Image resolution (grey scale)	:	640 (H) x 480 (V) pixel
Picture file formats	:	BMP, TIFF, JPEG

Decode Zone for MC 9090ex-K (1D-/2D-Imager Engine)

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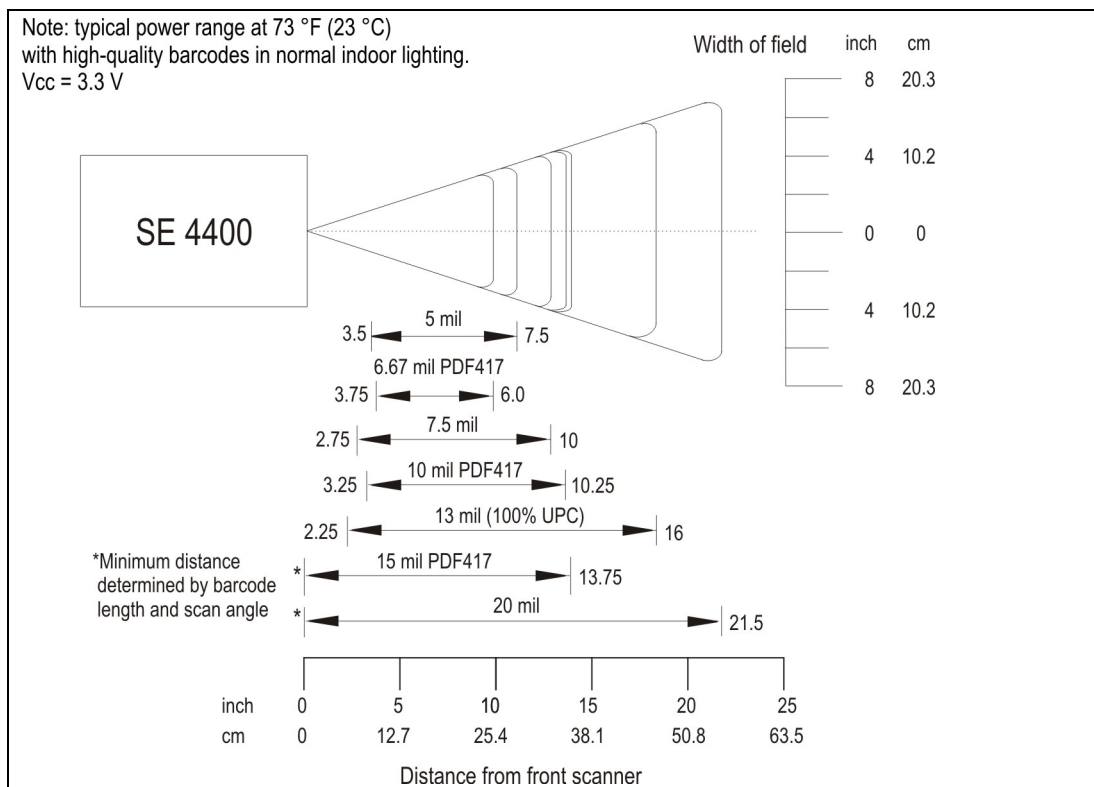
3.4 Technical Data - WLAN / WPAN

WLAN (integrated radio module)

Radio standard	:	IEEE 802.11a/b/g(direct sequence topologie)
Data rate	:	IEEE802.11a: up to 54 Mbit/sec IEEE802.11b: up to 11 Mbit/sec IEEE802.11g: up to 54 Mbit/sec
Frequency range	:	IEEE802.11a: 5 GHz IEEE802.11b: 2.4 GHz IEEE802.11g: 2.4 GHz
Output power (W or dBm)	:	100 mW (+20 dBm)
Antenna	:	Integrated in the device
Radio channels IEEE802.11a	:	Channel 8 - 64 (5040 MHz - 5350 MHz)
IEEE802.11b/g	:	Channel 1 - 13 (2412 MHz - 2472 MHz)

> **Note:** The respective radio frequencies and usable channels depends on the respective national regulations.

Safety	:	WEP (40 or 128 Bit), TKIP, TLS, TTLS (MS-CHAP), TTLS (MS-CHAP v2), TTLS (CHAP), TTLS-MD5, TTLS-PAP, PEAP-TLS, PEAP (MS-CHAP v2), AES, LEAP, WPA, WPA2 (Fusion 2.5 only), EAP Fast (Fusion 2.5 only), EAP GTC (Fusion 2.5 only)
Voice communication	:	Integrated voice over IP (P2P, PBX, PPT), Wi-Fi certified, IEEE802.11a/b/g
Bluetooth (WPAN)	:	Bluetooth – radio module version 1.2 with BT-Explorer (incl. BT-Manager)
Antenna	:	Integrated in the device

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3.5　Technical Data - Battery

Battery	:	Type B7-A2Z0-0006
(only rechargeable in the safe range)		Lithium Ion 7.4 V / 2200 mAh
Operating temperature　when charging	:	0 °C to +40 °C　32 °F to 104 °F
when discharging	:	-20 °C to +40 °C　-4 °F to 104 °F
Storage temperature　≤ 1 year	:	-25 °C to +20 °C　-13 °F to 68 °F
≤ 3 months	:	-25 °C to +45 °C　-13 °F to 113 °F
≤ 1 months	:	-25 °C to +60 °C　-13 °F to 140 °F
Relative air humidity	:	20 % - 85 %　(not condensing)

Backup Battery

Ni-MH battery (rechargeable)	:	3.6 V / 15 mAh (3 cells)
		integrated in the device, can be replaced only in the factory

External Battery Contacts　:
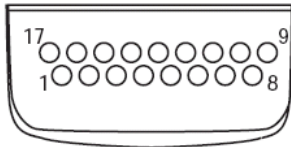
PIN	Signal Name	Function
1	USB_GND	USB
2	USB_D_Plus	USB
3	TxD	RS232C
4	RxD	RS232C
5	DCD	RS232C
6	RTS	RS232C
7	DSR	RS232C
8	GND	earth, 2.5 A max.
9	RI	RS232C
10	Cradle_DET	If the Mobile Computer is in the cradle, it is earthed through the cradle
11	DTR	RS232C
12	Not assigned	Not assigned
13	Power_IN	12 V / 2.5 A max.
14	CTS	RS232C
15	USB_5V_DET	USB
16	USB_D_Minus	USB
17	EXT_Power_OUT	3.3 V @ 500 mA

3.6   Product Marking

3.6.1   Mobile Computer MC 9090ex
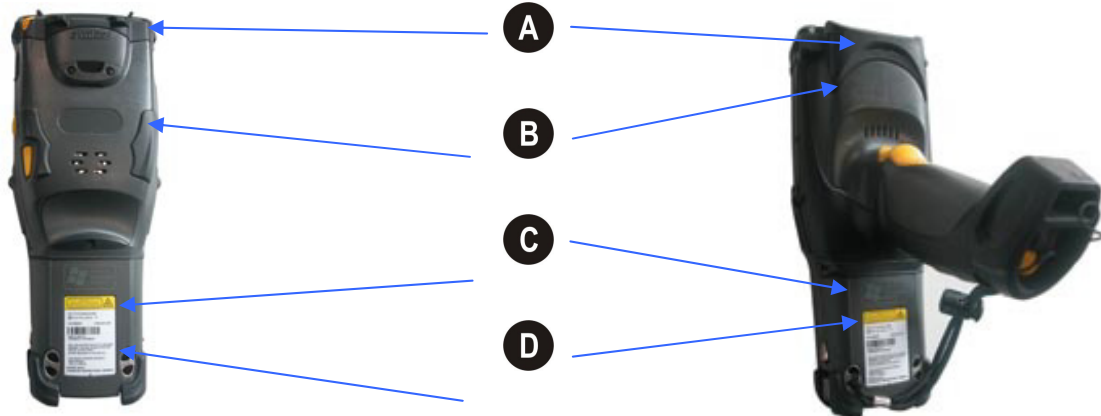
A Warning Laser

CAUTION - CLASS 3R LASER LIGHT WHEN OPEN. AVOID DIRECT EYE EXPOSURE.

ATTENTION - LUMIÈRE LASER DE CLASSE 3R, EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.

VORSICHT - LASERLICHT KLASSE 3R, WENN ABDECKUNG GEÖFFNET. DIREKTE BESTRAHLUNG DER AUGEN VERMEIDEN.

B Laser Mark of Compliance

Version Gun:
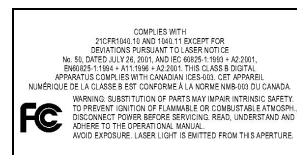
Version Brick:

C Warning Laser

D Type Lable

3.6.2   Battery B7-A2Z0-0006

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3.7 Laser Labels

In accordance with Clause 5, IEC 825 and EN 60825, the following information is provided to the user:

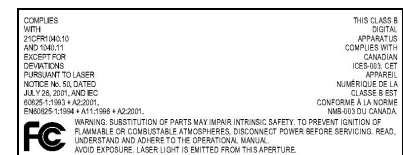|	DEUTSCH

	KLASSE 1 KLASSE 1 LASER PRODUKT
	KLASSE 2 LASERLICHT
	         NICHT IN DEN LASERSTRAHL SEHEN
	         KLASSE 2 LASER PRODUKT

ENGLISH
 	
CLASS 1   CLASS 1 LASER PRODUCT
CLASS 2   LASER LIGHT
         DO NOT STARE INTO BEAM
         CLASS 2 LASER PRODUCT
	DANISH / DANSK
	
	KLASSE 1 KLASSE 1 LASERPRODUKT
	KLASSE 2 LASERLYF
	         SE IKKE IND I STRÅLEN
	         KLASSE 2 LASERPRODUKT

ITALIAN / ITALIANO
 	
CLASSE 1   PRODOTTO AL LASER DI CLASSE 1
CLASSE 2   LUCE LASER
         NON FISSARE IL
         RAGGIOPRODOTTO
         AL LASER DI CLASSE 2
	DUTCH / NEDERLANDS
	
	KLASSE 1 KLASSE-1 LASERPRODUKT
	KLASSE 2 LASERLICHT
	         NIET IN STRAAL STAREN
	         KLASSE-2 LASERPRODUKT

NORWEGIAN / NORSK
 	
KLASSE 1   LASERPRODUKT, KLASSE 1
KLASSE 2   LASERLYS IKKE STIRR INN I
         LYSSTRÅLEN
         LASERPRODUKT, KLASSE 2
	FINNISH / SUOMI
	
	LUOKKA 1 LUOKKA 1 LASERTUOTE
	LUOKKA 2 LASERVALO
	         ÄLÄ TUIJOTA SÄDETTÄ
	         LUOKKA 2 LASERTUOTE

PORTUGUESE / PORTUGUÊS
 	
CLASSE 1   PRODUTO LASER DA CLASSE 1
CLASSE 2   LUZ DE LASER NÃO FIXAR O RAIO
         LUMINOSO
         PRODUTO LASER DA CLASSE 2
	FRENCH / FRANÇAIS
	
	CLASSE 1 PRODUIT LASER DE CLASSE 1
	CLASSE 2 LUMIERE LASER
	         NE PAS REGARDER LE RAYON
	         FIXEMENT
	         PRODUIT LASER DE CLASSE 2

3.8 WLAN / Bluetooth

3.8.1 Radio Modules

The device contain approved radio module(s). These module(s) are identified below.

- Symbol Modular RLAN radio card, type(s): 21-21160
- Symbol Bluetooth Terminal, model: 21-21160

3.8.2 Products Equipped with Bluetooth® Wireless Technology

This device contains the following bluetooth complimentary subsystems:

- BT ID:B01825
- BT ID:B02413

The use of wireless devices may be forbidden or restricted. This applies above all on board airplanes, in hospitals, in the vicinity of explosives or in other dangerous conditions. If you are not sure which instructions apply to the use of the device, ask for permission before switching on.

General and Country-specific Information on Wireless Devices:

Regulatory markings are applied to the device signifying the radio(s) are approved for use in the following countries:

- United States, Canada

Country Roaming

This device incorporates the international roaming feature (IEEE 802.11d) which will ensure the product operates on the correct channels for the particular country of use.

Ad-Hoc Operation

Ad-Hoc operation is limited to channels 36-48 (5150-5250 MHz). Use of this band is restricted to indoor use only, any other use will make the operation of this device illegal.

Frequency of Operation – FCC and IC

5 GHz Only   The use in the UNII (Unlicensed National Information Infrastructure) band 1: 5150-5250 MHz is restricted to indoor use only; any other use will make the operation of this device illegal.

2.4 GHz Only   The available channels for 802.11 b/g operation in the US are channels 1 to 11. The range of channels is limited by firmware.

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4   Commissioning

4.1   Mobile Computer

To ensure that the devices function correctly and have a long service life, they must be handled carefully. Chapter 5 "Handling" explains how to avoid inappropriate handling (e.g. by letting fall, damaging with objects).

Use the devices only if they are in a perfect technical condition.

Before using the Mobile Computer for the first time, charge the main battery (as described in chapter 4.3 "Battery").

4.2   Display

The display as supplied from the factory is covered with a protective film. Remove the protective film before using the device.

MC 9090ex with protective film

Take off the protective film

Use only the stylus included with the device to operate the touch screen. A biro, for example, could scratch or even destroy the touch screen.

The Mobile Computer must be treated carefully as the sensitive touch screen has a glass pane which can break if subjected to a lot of strain or let fall. The guarantee will be void if it is apparent that the damage to the touch screen is due to inappropriate use.

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4.3   Battery

ℹ️ Only battery type B7-A2Z0-0006 with 7.4 V / 2200 mAh can be used in the hazardous zone.

Note that battery type B7-A2Z0-0006 with 7.4 V/2200 mAh may only be changed outside the hazardous area

The Mobile Computer can be Charged Using a Cradle or a Charging Station.

ℹ️ Note that battery type B7-A2Z0-0006 with 7.4 V/2200 mAh may only be charged outside the hazardous area. Use only accessories approved by BARTEC. Do not attempt to charge damp/wet Mobile Computers or batteries. All components must be dry before they are connected to an external power supply.

4.3.1   Cradles

ℹ️ The cradle may be used for charging and for data communication only outside the hazardous area.

Insert the Mobile Computer into the cradle so that the battery will be recharged in the Mobile Computer (as well as any spare battery). A detailed description of the cradle configuration and the charging process can be found in the MC909X Integrator Guide from Symbol/Motorola.

Recommended Cradles:

- ◼ Serial/USB single-slot cradle with a separate battery charging compartment
- ◼ 4-slot ethernet cradle
- ◼ 4-slot cradle

4.3.2   Charging Station

ℹ️ The charging stations may only be used outside the hazardous areas.

The accessory part for recharging the spare battery for the Mobile Computers is used to recharge batteries that have been taken out of the Mobile Computer. A detailed description of the configuration of the accessories for charging spare batteries and of the charging process can be found in the MC909X Integrator Guide from Symbol/Motorola.

Recommended Charging Stations:

- ◼ 4-slot battery charger
- ◼ 4-slot quick-charging station for 4 adapters (adapters are not included in the scope of supply)

4.3.3 Power Supply

Use only the power packs approved by BARTEC/Motorola (50-14000-148, 12 Vdc and at least 3.33 A). The power pack is certified in accordance with EN 60950-1 and has SELV outputs.

The use of other power packs invalidates the permits granted for these devices and can be dangerous.

4.3.4 Charging the Battery

Make sure that the accessory part used for charging the battery is connected to a suitable power source.
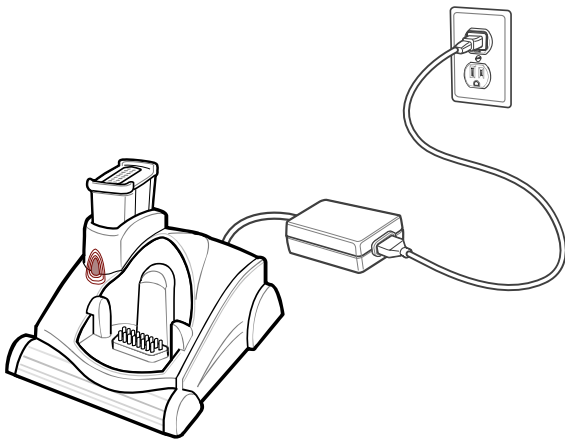
Insert the battery into the cradle or charging station. As a rule the battery will recharge completely in less than 8 hours. When the yellow LED is on and steady, the battery has finished charging.

LED Status

LED	Description
Yellow light flashes slowly	The Mobile Computer is recharging.
Steady yellow light	The charging process has finished.
	Note:
	If the battery is inserted into the Mobile Computer for the first time, the yellow LED will flash once if the battery has a low charging state or is not inserted completely.
Doesn't light up	The Mobile Computer is not in the cradle. The Mobile Computer has not been inserted correctly. There is no power supply to the charger.
Yellow light flashes in quick succession	Charging error, check the position of the Mobile Computer.

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4.4   Installing Battery

Do not remove the battery during the first 15 hours of operation. There is a risk of losing data if the battery is removed.

Sliding the battery into the Mobile Computer as shown in *Figure.*
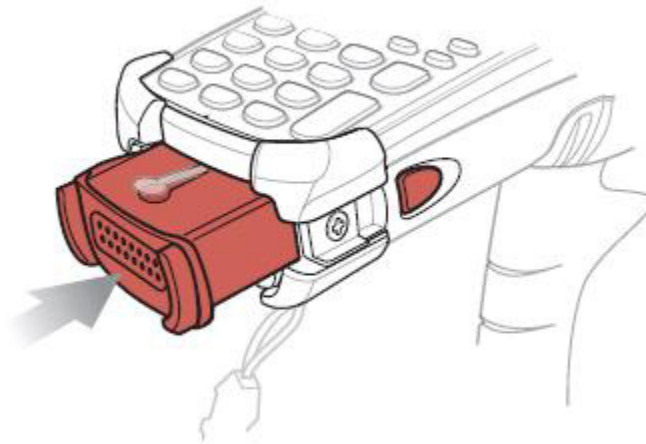
Ensure the battery is fully inserted. Two audible clicks can be heard as the battery is fully inserted. A partially inserted battery may result in unintentional data loss.

When a battery is fully inserted in a Mobile Computer for the first time, upon the Mobile Computer's first power up, the device boots and powers on automatically.

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5 Handling

Make sure that the Mobile Computer is set down on a stable supporting surface. Avoid putting it down on places such as e.g. tables, trolleys, stands or holders if they are not stable.

5.1 MC 9090ex-K Mobile Computer

In this position the device cannot be protected against damage.
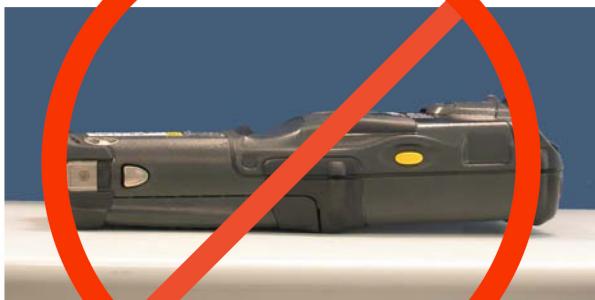
The display can be damaged by objects lying on the supporting surface.

This is not a stable position for the device.

It can topple over or fall down.

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5.2   MC 9090ex-G Mobile Computer

In this position the device cannot be protected against damage.

The scanner window can be damaged by objects lying on the supporting surface.

In this position the device cannot be protected against damage.

The display can be damaged by objects lying on the supporting surface.

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5.3 Battery

5.3.1 Battery Information

BARTEC rechargeable battery packs (type B7-A2Z0-0006) are designed and constructed to the highest standards within the industry. However, there are limitations to how long a battery can operate or be stored before needing replacement. Many factors affect the actual life cycle of a battery pack, such as heat, cold, harsh environmental conditions and falls from heights. When batteries are stored over 6 months, some irreversible deterioration in overall battery quality may occur.

Store batteries discharged in a dry, cool place, removed from the equipment to prevent loss of capacity, rusting of metallic parts and electrolyte leakage. When storing batteries for ½ year or longer, they should be charged and discharged at least once a year. If an electrolyte leakage is observed, avoid any contact with affected area and properly dispose of the battery. Replace the battery when a significant loss of run time is detected. Batteries must be charged within the 0° to +40 °C (32° to 104° F) temperature range.

Standard warranty period for all BARTEC batteries is 1 year, regardless of whether the battery was purchased separately or included as part of the Mobile Computer.

5.3.2 Charging Processes

Charging the Battery Separately

1. Remove the battery, type B7-A2Z0-0006

2. Prior to removing the battery, press the red **Power** button. This sets the Mobile Computer to suspend mode.

3. Press the primary battery release(s). (*1* in figure) The battery partially ejects from the Mobile Computer.
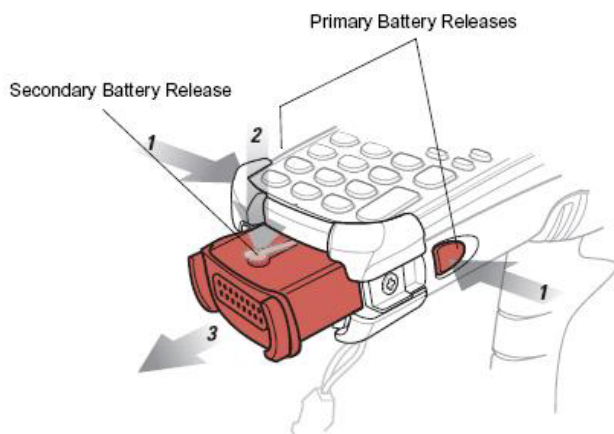
4. Pause 3 to 4 seconds while the Mobile Computer performs battery removal shutdown.

5. Press the secondary battery release (*2* in figure), on top of the battery, and slide the battery out of the Mobile Computer. (*3* in figure)

Insert the battery into the cradle or charging station. The battery is normally completely recharged in less than 8 hours. The battery has finished charging if the yellow LED is on and steady. (Follow instructions in chapter 4.3.4 "Charging the Battery").

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Charging the Battery in the Mobile Computer

Care must be taken that the devices to be charged are inserted into the charging station in the direction of the arrow.
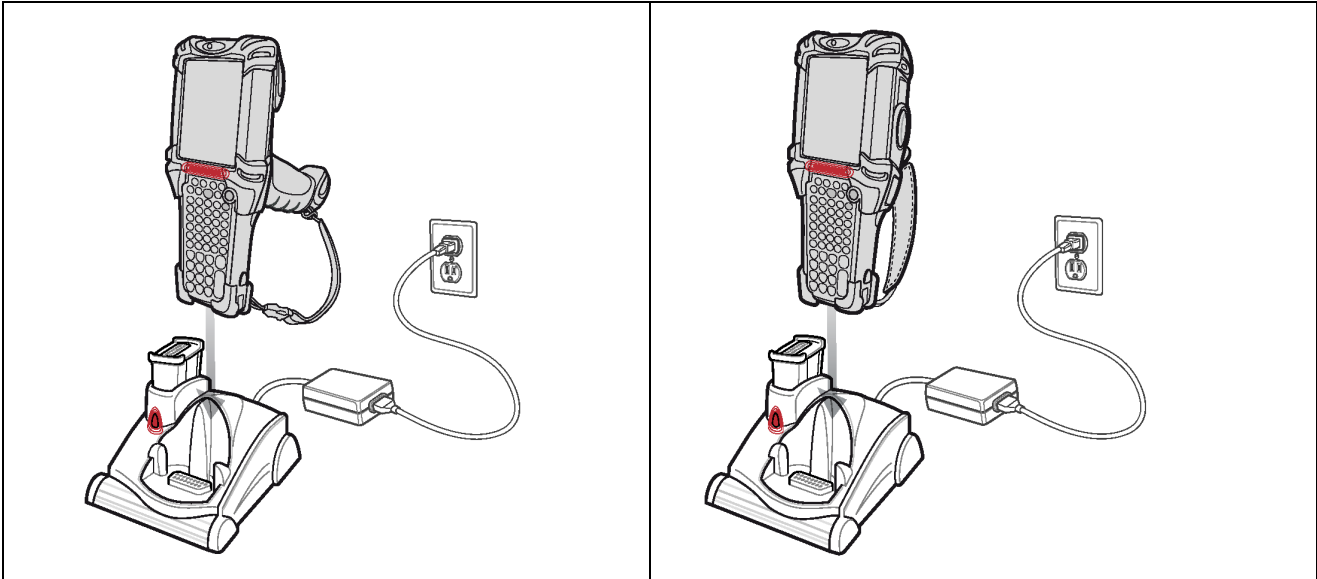
The Mobile Computer starts the charging process automatically. The yellow charging LED in the LED display bar lights up to indicate the charging status. Information on the charging displays can be found in chapter 4.3.4 "Charging the Battery" under "LED Status".

Charging the Backup Battery

The Mobile Computer has an integrated backup battery in addition to the main battery.

The backup battery is automatically recharged by the battery, irrespective of whether the Mobile Computer is in operation or in standby mode. The backup battery retains the data in memory for at least 30 minutes if the Mobile Computer's battery has been removed or completely discharged. If the Mobile Computer is being used for the first time or if it had been completely discharged, it will take about 15 hours to recharge the backup battery completely. Do not remove the battery from the Mobile Computer until after 15 hours to ensure that the backup battery has been completely recharged. If the battery is taken out of the Mobile Computer or if it was completely discharged, the backup battery will become discharged again in just a few hours.

When the main battery reaches a very low battery state, the combination of main battery and backup battery retains data in memory for at least 36 hours.

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5.3.3 Tips on Optimising the Operating Time

■ Leave the Mobile Computer connected to AC power at all times when not in use.

■ Set the Mobile Computer to turn off after a short period of non-use.

■ Set the display and keyboard backlight to turn off after a short period of non-use.

■ Turn off all wireless radio activity when not in use.

■ Power off the Mobile Computer when charging to charge at a faster rate.

5.4 Software Settings

5.4.1 Changing the Power Settings

To set the Mobile Computer to turn off after a short period of non-use:

➡ Tap **Start**   > Settings
> **System** tab
> **Power** icon
> **Advanced** tab

➡ Select the **On battery power: Turn off device if not used for:** check box and select a value from the drop-down list box. (In battery operation: turn off device if … inactive), and select a value in the dropdown list.

➡ Tap **OK**.

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5.4.2 Changing the Display Backlight Settings

To change the display backlight settings in order to conserve more battery power:

➡ Tap Start   > Settings
> System tab
> Backlight icon
> Battery Power tab

➡ Select the **On battery power: Disable backlight if not used for:** check box and select a value from the drop-down list box. (In battery operation: turn off the backlight if … inactive), and select a value in the dropdown list.

➡ Tap the **Brightness** tab.

➡ Tap the **Disable backlight** check box to completely turn off the display backlight.

➡ Use the slider to set the brightness of the backlight. Set it to a low value to save battery power.

➡ Tap **OK.**

5.4.3 WLAN on Windows Mobile 5.0

To turn off the WLAN radio tap the wireless connection status icon at the bottom of the today screen and select "Disable Radio". A red "X" appears across the icon indicating that the radio is disabled (off).

To turn the radio back on, tap the wireless connection status icon at the bottom of the today screen and select "Enable Radio". The red "X" disappears from the icon indicating that the radio is enabled (on).

5.4.4 Bluetooth on Windows Mobile 5.0

The "Flight Mode" feature only turns off the bluetooth. The WLAN radio must be turned off separately.

To turn off the bluetooth tap the **Connectivity icon** and select "**Turn On Flight Mode**".

To turn on the bluetooth tap the **Connectivity icon** and select "**Turn Off Flight Mode**".

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5.4.5 Waking the Mobile Computer

The wake-up conditions define what actions wake up the Mobile Computer. These settings are configurable and the factory default settings shown in the following table are subject to change/update.

Table Wake-up Conditions (Default Settings)

Status	Description	Conditions for Wake-up
Power Off	When the Mobile Computer is set to the suspend mode by pressing **Power**, these actions wake the Mobile Computer.	1. Power button is pressed. 2. AC power added or removed.
		Key or scan button is pressed.
		Real Time Clock set to wake-up.
Auto Off	When the Mobile Computer goes into suspend mode by an automatic power-off function, these actions wake the Mobile Computer.	3. **Power** button is pressed. 4. AC power added or removed.
		Key or scan button is pressed.
		Real Time Clock set to wake-up.

5.4.6 Connection with the PC via Active Syne for OS Windows 98, NT, 2000 und XP

To sync or installation software/data use the Microsoft program ActiveSync. ActiveSync is available for a free download.

www.mircosoft.com

Note: To communicate with various host devices, install Microsoft ActiveSync (version 4.1 or higher) on the host computer. Use ActiveSync to synchronize information on the Mobile Computer with information on the host computer. Changes made on the Mobile Computer or host computer appear in both places after synchronization.

More information for ActiveSync can be found in the Motorola Integrator Guide.

5.4.7 Connection with the PC via Device Center for OS Windows Vista

To sync or installation software/data use the Microsoft program Mobile Device Center. It is available for a free download.

www.mircosoft.com

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5.5 Booting Mobile Computer

5.5.1 Windows Mobile 5.0 Devices

If the functions stop working when you are using the Mobile Computer, it is recommendable to **REBOOT** the device.

There are two reset functions, warm boot and cold boot.

A warm boot restarts the Mobile Computer and closes all running programs.

A cold boot also restarts the Mobile Computer and closes all running programs but also resets the Real Time Clock (RTC).

Data saved in flash memory or a memory card is not lost. Perform a warm boot first. This restarts the Mobile Computer and saves all stored records and entries. If the Mobile Computer still does not respond, perform a cold boot.

5.5.2 Performing a Warm Boot

Hold down the **Power** button for approximately five seconds. As soon as the Mobile Computer starts to perform a warm boot release the **Power** button.

5.5.3 Performing a Cold Boot

Only perform a cold boot if a warm boot does not solve the problem.

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To perform a Cold Boot on a MC 9090ex-G:

1. Press the primary battery release on the Mobile Computer to partially eject the battery from the Mobile Computer.
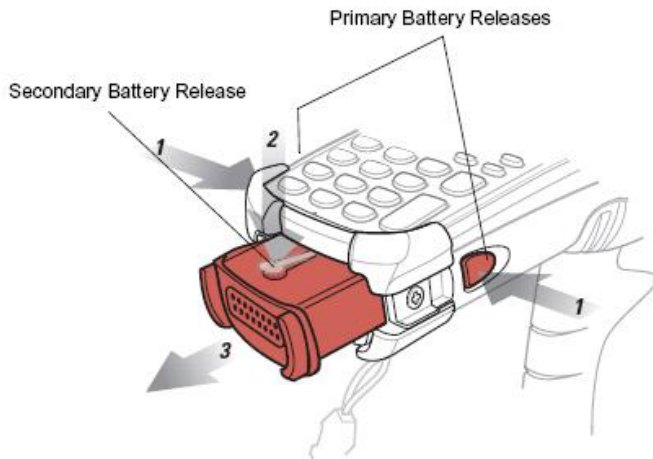
2. On a MC 9090ex-G, while the battery is partially released, simultaneously press and release the trigger and the **Power** button.

3. Only the battery may be pushed into the battery compartment in the Mobile Computer.
   One audible click can be heard as the battery is fully inserted.

4. The Mobile Computer initializes.

More information can be found in the original manual from Symbol/Motorola.

To perform a Cold Boot on a MC 9090ex-K:

5. Press the primary battery release on the Mobile Computer to partially eject the battery from the Mobile Computer. (see figure: cold boot MC 9090ex-G).

6. On a MC 9090ex-K while the battery is partially released, simultaneously press and release the left scan button and the **Power** button.

7. The Mobile Computer initializes.

More information can be found in the original manual from Symbol/Motorola.

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6 Additional Components

6.1 Keypad and SD Card

6.1.1 Keypad with Green Overlay for use in Class I, II and III Div 2 areas

Options		Order number
28 keys		05-0080-0425
43 keys		05-0080-0427
33 keys		05-0080-0426
53 keys		05-0080-0424
53 keys keypad coding for	VT emulation	05-0080-0429
53 keys keypad coding for	3270 emulation	05-0080-0428
53 keys keypad coding for	5250 emulation	05-0080-0430
53 keys for MC9090 – G RFID		05-0080-0431
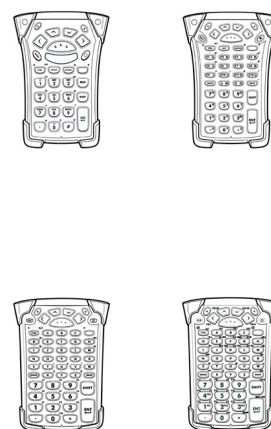
ℹ️ When replacing the keypad, follow the instructions in chapter 6.1.3 "Removing/Changing the Keypad"

6.1.2 SD Cards

Memory card size	Order number
512 MB	17-28BE-F006/0001
1 GB	17-28BE-F006/0002
2 GB	17-28BE-F006/0003

Front view

Rear view

ℹ️ The hardware status of the SD card is specified in the type examination certificate. Only SD cards with the order number 17-28BE-F006/000x may be used.

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6.1.3　Removing/Changing the Keypad

⚠️　The keypad and SD card may only be replaced outside the hazardous area!

1. Turn off the MC 9090ex.

2. Remove the battery. (see chapter 5.3.2 "Charging Processes")

3. Take out the screws at the top edge of the keypad.

Screws

Keypad

Multi Media Card Holder
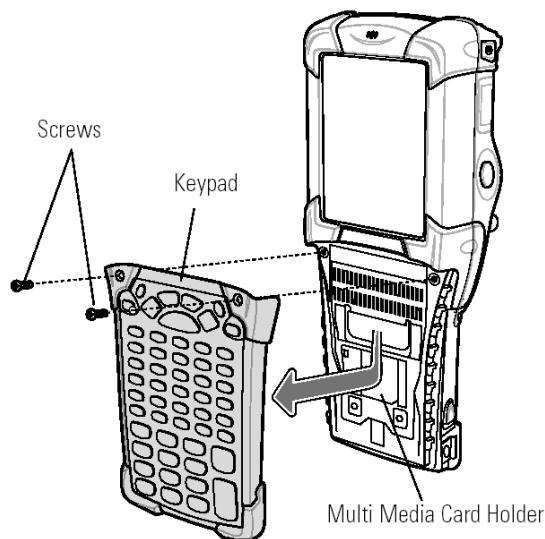
Fig. 1: Removing the keypad

4. Pull the keypad downwards in the direction of the arrow and then forwards to take it out of the MC 9090ex.

5. Check that the contacts and seals are clean and in good condition.

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6. Snap on the keypad in the direction of the arrow (fig. 4) and push it upwards until the boreholes for the screws are over the threaded sleeves.
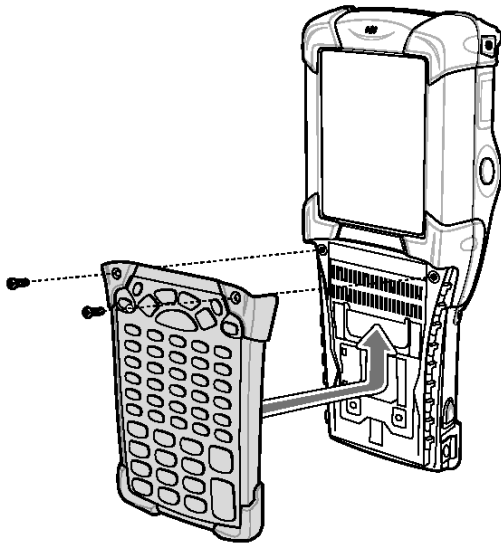
Fig. 4: Changing the keypad

7. Check that the keypad is mounted correctly.

Figure 5: Keypad mounted correctly   Figure 6: Keypad mounted incorrectly

8. Push the keypad in the direction of the arrow (fig. 4) until the boreholes on the keypad are positioned over the threaded holes on the enclosure. Tighten the screws (torque = 0.565 Nm / torque = 5.0 in-lbs),
0.5 Nm advisable
Caution: The torque must be adhered to.

9. After the exchange of the keyboard a cold boot (see chapter 5.5 "Warm Boot and Cold Boot ") must be performed.

The current drivers of the new keyboard are initialized by the cold boot.

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6.1.4 Inserting/Replacing the SD Card

The hardware status of the SD cards is specified in the test certificate. Accordingly only the SD cards with the order number 17-28BE-F006/000x are to be used.

1. Take off the keypad as instructed in chapter 6.1.3; repeat steps 1 - 4.

SD card slot
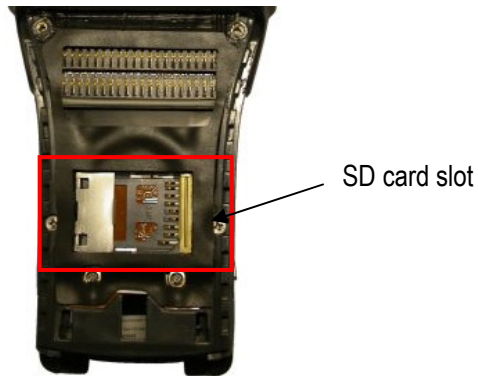
Figure 7: MC 9090ex without keypad

2. Lift up the card holder, insert the SD card under the clamp in the designated direction and position correctly. (The side with the gold contacts faces downwards)

MMC/SD

MMC/SD Retaining Door
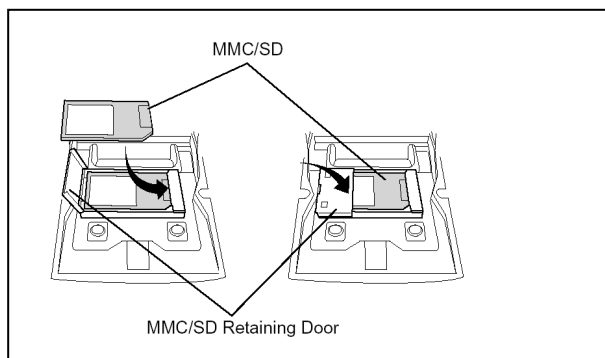
Figure 8: Replacing the SD card

3. Check that the keypad is mounted correctly.

Mount the keypad onto the MC 9090ex as shown in chapter 6.1.3; steps 5 - 10.

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6.2 Open Case and Holster

6.2.1 Open Case for MC 9090ex "Version Gun", Type B7-A229-0Gx0HJxFA6xx

Order No.: 03-9809-0009 Open case for MC 90xxex-G

03-9809-0011 Loop for open case (Gun)

The open case is made of leather and suitable for use in the hazardous area.

> Do not use open cases or holsters that are not made of leather and not approved for use in hazardous areas.

> **The Mobile Computer must be switched off before it may be carried on the body.**

Open case for MC 90xxex Gun

Loop for open case

Example of how the open case be worn

Front view

Side view

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6.2.2 Holster for MC9090ex "Version Brick", Type B7-A229-0Kx0HJxFA6xx

Order No.:03-9809-0010   Holster for MC 90xxex-K

The holster is made of leather and suitable for use in the hazardous area.

i Do not use open cases or holsters that are not made of leather and not approved for use in hazardous areas.

i **The Mobile Computer must be switched off before it may be carried on the body.**

Holster for MC 90xxex Gun

Example of how the holster can be worn

Front view

Side view

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6.3 Stylus

6.3.1 Stylus for MC 9090ex-K

Order number for stylus (yellow):	
3-pack	03-9849-0041
10-pack	03-9848-0042
Stylus with holder	
3-pack	03-9849-0039
50-pack	03-9848-0040

6.3.2 Stylus for MC 9090ex-G

Order number for stylus (grey):	
10-pack	03-9849-0021
50-pack	03-9848-0022
Stylus with holder	
3-pack	03-9849-0043
50-pack	03-9848-0044

6.4 Headset or Other Audio Devices

Adjust the volume. Turn down the volume before using the headphones or other audio devices.

ℹ️ Do not use headsets or other audio devices that are not approved for the hazardous zone.

7 Maintenance

7.1 Care of the Battery

The battery should be completely charged before it is used for the first time. Note that the maximum capacity of the battery is not attained until after approx. 5 - 6 charging and discharging cycles.

As the battery power diminishes over the course of time, the batteries should be completely discharged and recharged every now and then in order to retain the full capacity. For that purpose the devices are left switched on until the devices switch off themselves. Then recharge the battery completely outside the Ex zone.

Before a lengthy idle time it is essential to charge the battery completely and to recharge it regularly (every 3 months).

7.2 Cleaning the Battery Contacts

■ Check the battery contacts and the battery compartment regularly for:

– - rust, dust deposits and dirt

■ To clean the contacts, use e.g. a rubber eraser, contact spray, cotton buds or a dry cloth.

■ Avoid using water or chemical agents for cleaning

7.3 Information about Repairs

If you wish to send in a defective device for repairs please first read the RMA procedure guide. Then fill in and sign the RMA (Return Merchandise Authorisation) form and send it to our service centre.

Email: services@bartec.de
Fax: +49 7931 597-119

We cannot guarantee any contractually agreed processing times for devices that are sent in without an RMA number.

The RMA guide and the RMA form are available on our homepage for downloading.

www.bartec.de

Any questions? Send us an e-mail or call us.

E-mail: services@bartec.de
Phone: +49 7931 597-379

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8 Additional Informations

8.1 Links

http://www.bartec-group.com   BARTEC Homepage

http://www.symbol.com   Motorola Homepage

http://www.symbol.com/   The Motorola site for the MC 9000

➡ Support and Resources

➡ Product Manuals

➡ Mobile Computers

➡ MC 9090 WM

http://www.symbol.com/   The Motorola site for the MC 9000

➡ Products and Services

➡ Mobile Computers

➡ Industrial Class

➡ MC 9000

http://www.symbol.com/products/oem-products/scan-engines   The Motorola site for the Scan Engine

➡ SE 1524ER   Lorax Long Range Scan Engine

➡ SE 95X   Standard Range Scan Engine

➡ SE 4400 Imager   Imager 2D

http://devcentral.symbol.com   The Motorola Developer Central Page for Software Developers.
This page has tools, updates, patches etc. for the individual Symbol products.

To access the pages, it is first necessary to register.
The registration is free of charge.

http://www.microsoft.com   Microsoft site for Active Sync and
Windows Mobile Device Center for Windows Vista

http://www.microsoft.com/downloads   Microsoft Page for Developers
Download eMbedded Visual C++ 4.0 or other versions free of charge.

➡ Windows Mobile

➡ eMbedded Visual C++ 4.0

http://www.microsoft.com/downloads Download updates for eMbedded Visual C++ 4.0 or other versions free of charge:

➡ Select "Show Downloads" eMbedded Visual C++ 4.0 in the menu.

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8.2 Accessories

Designation	Order number Motorola	Order number BARTEC
Accessories for the Hazardous Area		
Ex Accessory: **Battery**		
Spare battery for devices with UL approval		B7-A2Z0-0006
Ex Accessory: SD Card for ATEX and UL Version		
ATP Industrial Grade SD card with 512 MB		17-28BE-F006/0001
ATP Industrial Grade SD card with 1 GB		17-28BE-F006/0002
ATP Industrial Grade SD card with 2 GB		17-28BE-F006/0003
Ex Accessory: **Spare Keypad with Green Overlay for UL Class I, II and III Div 2**		
Spare keypad		
- with 28 keys		05-0080-0425
- with 43 keys		05-0080-0427
- with 33 keys		05-0080-0426
- with 53 keys		05-0080-0424
- with 53 keys keypad coding for VT emulation		05-0080-0429
- with 53 keys keypad coding for 3270 emulation		05-0080-0428
- with 53 keys keypad coding for 5250 emulation		05-0080-0430
- with 53 keys for MC9090-G RFID		05-0080-0431
Ex Accessory: **Spare Screw for Keypad**		03-1321-0007
Ex Accessory: **Spare Overlay (green) for Keypad for UL Class I, II and III Div 2**		
Overlay		
- for 28 keys		039829-0025
- for 33 keys		039829-0033
- for 43 keys		039829-0026
- for 53 keys		039829-0027
- for 53 keys keypad coding for VT emulation		039829-0028
- for 53 keys keypad coding for 3270 emulation		039829-0029
- for 53 keys keypad coding for 5250 emulation		039829-0030

Designation	Order number Motorola	Order number BARTEC
Accessories for the Non-Hazardous Area		
Single Slot Cradle Set:		05-0079-0018
Consists of:		
Single slot cradle	CRD9000-1001SR	03-9915-0003
Power pack	50-14000-148R	03-9911-0015
RS232 cable (Cradle <-> PC)	25-63852-01R	03-9919-0004
USB cable (Cradle <-> PC)	25-64396-01R	03-9919-0008
Line cord (DE)	50-16000-220R	03-9609-0013
4-Slot Ethernet Cradle Set		05-0079-0028
Consists of:		
4-slot ethernet cradle	CRD9000-4001ER	03-9849-0026
Power pack	50-14001-004R	03-9911-0021
DC cable (Power pack <-> 4 Slot Cradle)	50-16002-029R	03-9919-0010
Line cord (DE)	50-16000-220R	03-9609-0013
UBC 2000		
4-slot base station set without battery adapter		05-0079-0017
4-slot base station	UBC2000-I500DR	03-9915-0004
Battery adapter for UBC 2000	21-32665-48R	03-9919-0007
Line cord (DE)	50-16000-220R	03-9609-0013
User Manual		
Mobile Computer MC 9090ex Version UL Class I, II and III Div 2		B1-A229-7D0001
Quick Short Guide (Poster)		
Mobile Computer MC 9090ex-G Version ATEX/UL		03-0300-0087
Mobile Computer MC 9090ex-K Version ATEX/UL		03-0300-0088

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8.3 Order Numbers

B7-A229-0G☐0/HC☐FA600

J	Lorax 1D-Long Range Scan Engine (SE 1524)

A	28 Keys	(mobile phone keypad)
F	43 Keys	(with function keys F1 - F12 in direct access)
L	33 Keys	(mobile phone keypad)
E	53 Keys	(alphanumeric keypad)
G	53 Keys	Keypad coding for VT emulation (the software is not installed on the device)
H	53 Keys	Keypad coding for 3270 emulation (the software is not installed on the device)
J	53 Keys	Keypad coding for 5250 emulation (the software is not installed on the device)

Example: MC9090ex-G with 53 keys.

Type B7-A229-0GJ0/HCEFA600

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B7-A229-0K☐0/HC☐FA600

A	1D-Standard Range Scan Engine (SE950)
K	2D-Imager Engine (SE1440)

A	28 Keys	(mobile phone keypad)
F	43 Keys	(with function keys F1 - F12 in direct access)
L	33 Keys	(mobile phone keypad)
E	53 Keys	(alphanumeric keypad)
G	53 Keys	Keypad coding for VT emulation (the software is not installed on the device)
H	53 Keys	Keypad coding for 3270 emulation (the software is not installed on the device)
J	53 Keys	Keypad coding for 5250 emulation (the software is not installed on the device)

Example: MC 9090ex-G with 2D-Imager Engine and 43 keys.

Type B7-A229-0KK0/HCFFA600

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9   Transport and Shipment

Important Note: Concerning Transport and Shipping

> **! Sensitive Devices !**
>
> **It is absolutely necessary to deliver the equipment in the original packaging in order to avoid damage to the equipment.**

Appendix A – MC 9090ᵉˣ RFID UHF (R7)

User Manual

Mobile Computer MC 9090ᵉˣ RFID / UHF (R7)

Typ B7-A229-RG.0/H...R7..

UL Version

Version 1.01
Document No. B1-A229-7D0001
INDEX A / Status: 11 March 2010

Technical data subject to change!

Technical data subject to change without notice.
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A1   Product description

The MC 9090ex-G RFID/UHF Mobile Computer with a pistol grip is a compact unit for scanning barcodes and RFID tags reliably in hazardous areas.

The scan trigger is conveniently positioned at the pistol grip. Thus barcodes can be captured with only one hand. The integrated radio module enables real time data access to your host system. The MC 9090ex-G RFID/UHF combines the strength of Microsoft's Pocket PC platform with the power of the Intel® XScaleTM PXA270 processor with 624 MHz.

A further highlight is the large easy-to-read ¼ VGA color display with touch screen technology. The MC 9090ex-G RFID/UHF is working with the IEEE802.11 a/b/g (Direct sequence).

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A2 Technical Data

A2.1 Explosion Protection

Type	:	B7-A229-RG*0/H***R7**
Ex protection type	:	Class I, II and III Div 2 Groups A, B,C, D, F and G T5
Certification	:	UL File No. E321557

A2.2 General Data

Dimensions (height x width x depth)		273 mm x 119 mm x 195 mm 10.75 inch x 4.7 inch x 7.7 inch
Ambient temperature	:	-20 °C to +50 °C -4 °F to 104 °F
Ambient temperature when charging	:	0 °C to +40 °C 32 °F to 104 °F
Weight including battery		ca. 1100 g ca. 35 oz
Operating system	:	Windows Mobile 2005 (English)
Keypad versions	:	53 key

A2.3 RFID

Standards supported		EPC Gen 1 (Class 0 & Class 1) and Gen 2
Nominal read range *	:	6,09 cm to 304.8 cm 0.2 ft. to 10 ft.
Nominal write range *	:	30.5 cm to 60.9 cm 1 ft. to 2 ft.
Field	:	70-degree cone (approx.) measured from nose of device
Antenna	:	Integrated, linearly polarized
Frequency Range	:	902 to 928 MHz
Output Power	:	1 W (4 W EIRP)
	:	
*		* Actual read/write range is dependent upon a number of factors, including the specific tag used, nature of the items tagged, and presence or absence of radio interference.

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A3   Additional Informations

A3.1   Links

http://www.symbol.com   Motorola Homepage

http://www.symbol.com/   The Motorola site for the MC 9000 Software and Manuals

➡   Support and Resources

➡   Product Manuals

➡   Mobile Computers

➡   MC 9090-G RFID

http://devcentral.symbol.com   The Motorola Developer Central Page for Software Developers.
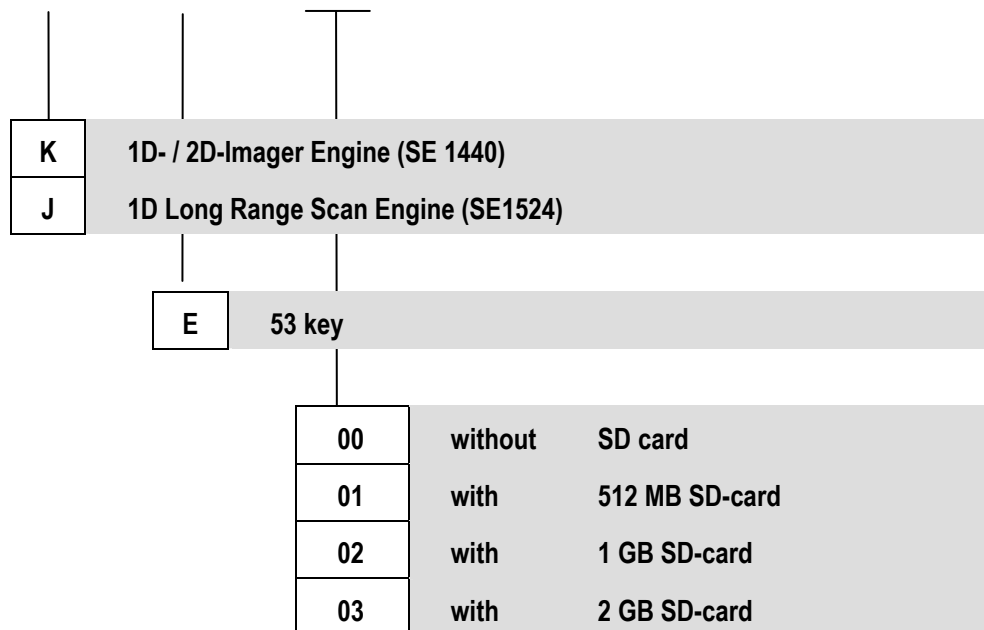This page has tools, updates, patches etc. for the individual Symbol products.

To access the pages, it is first necessary to register.
The registration is free of charge.

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A3.2   Order Numbers

B7-A229-RG☐0/HC☐FR7☐☐

K	1D- / 2D-Imager Engine (SE 1440)
J	1D Long Range Scan Engine (SE1524)

E	53 key

00	without	SD card
01	with	512 MB SD-card
02	with	1 GB SD-card
03	with	2 GB SD-card

Example: MC 9090ex RFID/UHF (R7) with 1D- / 2D-Imager Engine and 53 key without SD-card.

Type B7-A229-RGK0/HCEFR700

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BARTEC protects

people   and

the environment

by the safety

of components,

s y s t e m s

and plants.