



**Kyman™**  
User's Manual





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**USER'S MANUAL**





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Kyman™ - User's Manual

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# REFERENCES

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## CONVENTIONS

This manual uses the following conventions:

“User” refers to anyone using a Kyman™.

“Device” refers to the Kyman™.

“You” refers to the System Administrator or Technical Support person using this manual to install, mount, operate, maintain or troubleshoot a Kyman™.

## REFERENCE DOCUMENTATION

For further details refer to the Development System Manual of DS for Mobile@work.

## SERVICE, SUPPORT AND WARRANTY

Datalogic provides several services as well as technical support through its website. Log on to [www.datalogic.com/services](http://www.datalogic.com/services) and click on the links indicated for further information including:

- **Services** – Warranty Extensions and Maintenance Agreements
- **Downloads** – Software Downloads, Manuals and Catalogues
- **Contact Us** – Listing of Datalogic Subsidiaries and Quality Partners
- **Authorised Repair Centres**

# SAFETY REGULATIONS

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**NOTE**

*Read this manual carefully before performing any type of connection to the Kyman™ terminal.*

*The user is responsible for any damages caused by incorrect use of the equipment or by inobservance of the indication supplied in this manual.*

## GENERAL SAFETY RULES

- Use only the components supplied by the manufacturer for the specific Kyman™ terminal being used. The use of cradles other than those supplied with the Kyman™ terminal or indicated in the list in paragraph 1.3 could cause serious damage to the Kyman™ terminal.
- Do not attempt to disassemble the Kyman™ terminal, as it does not contain parts that can be repaired by the user. Any tampering will invalidate the warranty.
- When replacing the batteries or at the end of the operative life of the Kyman™ terminal, disposal must be performed in compliance with the laws in force.
- Do not submerge the Kyman™ terminal in liquid products.



# LASER SAFETY

The laser light is visible to the human eye and is emitted from the window indicated in the figure.



I	D	F	E
La luce laser è visibile all'occhio umano e viene emessa dalla finestra indicata nella figura.	Die Laserstrahlung ist für das menschliche Auge sichtbar und wird am Strahlaustrittsfenster ausgesendet (siehe Bild).	Le rayon laser est visible à l'oeil nu et il est émis par la fenêtre désignée sur l'illustration dans la figure.	La luz láser es visible al ojo humano y es emitida por la ventana indicada en la figura.
LUCE LASER NON FISSARE IL FASCIO APPARECCHIO LASER DI CLASSE 2 MINIMA POTENZA DI USCITA: LUNGHEZZA D'ONDA EMESSA: CONFORME A EN 60825-1 (2001)	LASERSTRAHLUNG NICHT IN DER STRAHL BLINKEN PRODUKT DER LASERKLASSE 2 MAXIMALE AUSGANGLEISTUNG: WELLENLÄNGE: ENTSPR. EN 60825-1 (2001)	RAYON LASER EVITER DE REGARDER LE RAYON APPAREIL LASER DE CLASSE 2 PUISSANCE DE SORTIE: LONGUEUR D'ONDE EMISE: CONFORME A EN 60825-1 (2001)	RAYO LÁSER NO MIRAR FIJO EL RAYO APARATO LÁSER DE CLASE 2 MÁXIMA POTENCIA DE SALIDA: LONGITUD DE ONDA EMITIDA: CONFORME A EN 60825-1 (2001)

### ENGLISH

The following information is provided to comply with the rules imposed by international authorities and refers to the correct use of your terminal.

#### STANDARD LASER SAFETY REGULATIONS

This product conforms to the applicable requirements of both CDRH 21 CFR 1040 and EN 60825-1 at the date of manufacture.

For installation, use and maintenance, it is not necessary to open the device.



**CAUTION**

*Use of controls or adjustments or performance of procedures other than those specified herein may result in exposure to hazardous visible laser light.*

The product utilizes a low-power laser diode. Although staring directly at the laser beam momentarily causes no known biological damage, avoid staring at the beam as one would with any very strong light source, such as the sun. Avoid that the laser beam hits the eye of an observer, even through reflective surfaces such as mirrors, etc.

## ITALIANO

Le seguenti informazioni vengono fornite dietro direttive delle autorità internazionali e si riferiscono all'uso corretto del terminale.

### NORMATIVE STANDARD PER LA SICUREZZA LASER

Questo prodotto risulta conforme alle normative vigenti sulla sicurezza laser alla data di produzione: CDRH 21 CFR 1040 e EN 60825-1.

Non si rende mai necessario aprire l'apparecchio per motivi di installazione, utilizzo o manutenzione.



**ATTENZIONE**

*L'utilizzo di procedure o regolazioni differenti da quelle descritte nella documentazione può provocare un'esposizione pericolosa a luce laser visibile.*

Il prodotto utilizza un diodo laser a bassa potenza. Sebbene non siano noti danni riportati dall'occhio umano in seguito ad una esposizione di breve durata, evitare di fissare il raggio laser così come si eviterebbe qualsiasi altra sorgente di luminosità intensa, ad esempio il sole. Evitare inoltre di dirigere il raggio laser negli occhi di un osservatore, anche attraverso superfici riflettenti come gli specchi.

## DEUTSCH

Die folgenden Informationen stimmen mit den Sicherheitshinweisen überein, die von internationalen Behörden auferlegt wurden, und sie beziehen sich auf den korrekten Gebrauch vom Terminal.

### NORM FÜR DIE LASERSICHERHEIT

Dies Produkt entspricht am Tag der Herstellung den gültigen EN 60825-1 und CDRH 21 CFR 1040 Normen für die Lasersicherheit.

Es ist nicht notwendig, das Gerät wegen Betrieb oder Installations-, und Wartungsarbeiten zu öffnen.



**ACHTUNG**

*Jegliche Änderungen am Gerät sowie Vorgehensweisen, die nicht in dieser Betriebsanleitung beschrieben werden, können ein gefährliches Laserlicht verursachen.*

Der Produkt benutzt eine Laserdiode. Obwohl zur Zeit keine Augenschäden von kurzen Einstrahlungen bekannt sind, sollten Sie es vermeiden für längere Zeit in den Laserstrahl zu schauen, genauso wenig wie in starke Lichtquellen (z.B. die Sonne). Vermeiden Sie es, den Laserstrahl weder gegen die Augen eines Beobachters, noch gegen reflektierende Oberflächen zu richten.

## FRANÇAIS

Les informations suivantes sont fournies selon les règles fixées par les autorités internationales et se réfèrent à une correcte utilisation du terminal.

### NORMES DE SECURITE LASER

Ce produit est conforme aux normes de sécurité laser en vigueur à sa date de fabrication: CDRH 21 CFR 1040 et EN 60825-1.

Il n'est pas nécessaire d'ouvrir l'appareil pour l'installation, l'utilisation ou l'entretien.



**ATTENTION**

*L'utilisation de procédures ou réglages différents de ceux donnés ici peut entraîner une dangereuse exposition à lumière laser visible.*

Le produit utilise une diode laser. Aucun dommage aux yeux humains n'a été constaté à la suite d'une exposition au rayon laser. Eviter de regarder fixement le rayon, comme toute autre source lumineuse intense telle que le soleil. Eviter aussi de diriger le rayon vers les yeux d'un observateur, même à travers des surfaces réfléchissantes (miroirs, par exemple).

## ESPAÑOL

Las informaciones siguientes son presentadas en conformidad con las disposiciones de las autoridades internacionales y se refieren al uso correcto del terminal.

### NORMATIVAS ESTÁNDAR PARA LA SEGURIDAD LÁSER

Este aparato resulta conforme a las normativas vigentes de seguridad láser a la fecha de producción: CDRH 21 CFR 1040 y EN 60825-1.

No es necesario abrir el aparato para la instalación, la utilización o la manutención.



**ATENCIÓN**

*La utilización de procedimientos o regulaciones diferentes de aquellas descritas en la documentación puede causar una exposición peligrosa a la luz láser visible.*

El aparato utiliza un diodo láser a baja potencia. No son notorios daños a los ojos humanos a consecuencia de una exposición de corta duración. Eviten de mirar fijo el rayo láser así como evitarían cualquiera otra fuente de luminosidad intensa, por ejemplo el sol. Además, eviten de dirigir el rayo láser hacia los ojos de un observador, también a través de superficies reflectantes como los espejos.

## RADIO COMPLIANCE

In radio systems configured with portable terminals and access points, the frequencies to be used must be allowed by the spectrum authorities of the specific country in which the installation takes place. Be absolutely sure that the system frequencies are correctly set to be compliant with the spectrum requirements of the country.

The Radio Card used in this product automatically adapts to the frequencies set by the system and does not require any parameter settings.



**NOTE**

*For RadioReady versions, the correct conformity label for your radio model must be applied to the Kyman™ terminal to indicate that the terminal is in conformity with the directives related to the Kyman™/RF version.*

## Information for the User

### ENGLISH

Contact the competent authority responsible for the management of radio frequency devices of your country to verify the eventual necessity of a user license. Refer to the web site <http://europa.eu.int/comm/enterprise/rtte/spectr.htm> for further information.

### ITALIANO

Prendi contatto con l'autorità competente per la gestione degli apparati a radio frequenza del tuo paese, per verificarne l'eventuale necessità della licenza d'uso. Inoltre puoi trovare ulteriori informazioni al sito: <http://europa.eu.int/comm/enterprise/rtte/spectr.htm>.

### FRANÇAIS

Contactez l'autorité compétente en la gestion des appareils à radio fréquence de votre pays pour vérifier la nécessité du permis d'usage. Pour tout renseignement vous pouvez vous adresser au site web: <http://europa.eu.int/comm/enterprise/rtte/spectr.htm>.

### DEUTSCH

Um die Notwendigkeit der Verwendungslizenz zu prüfen, wenden Sie sich an die Behörde, die auf der Radiofrequenzgerätsführung Ihres Lands bewandert ist. Weitere Informationen sind verfügbar auf dem Web Site: <http://europa.eu.int/comm/enterprise/rtte/spectr.htm>.

## ESPAÑOL

Contacta con la autoridad competente para la gestión de los dispositivos de radio frecuencia de tu país, para verificar si es necesario la licencia de uso. Además se puede encontrar mas información en el sitio web:  
<http://europa.eu.int/comm/enterprise/rtte/spectr.htm>.



## FCC COMPLIANCE

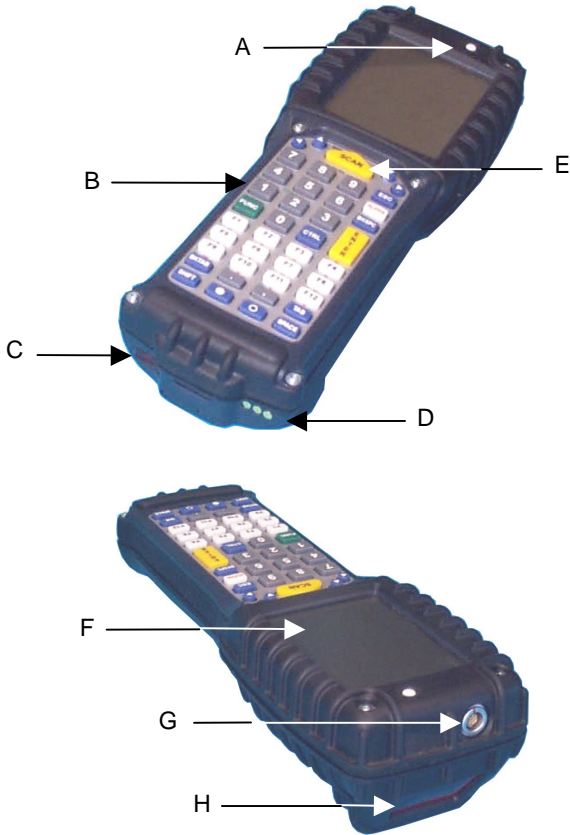
This compliance refers only to the Kyman™ batch version.

*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 which may cause undesired operation.*

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# GENERAL VIEW

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Key:

- A) Keyboard Status/Battery Low LED
- B) Keyboard
- C) IrDA port
- D) Recharge contacts for CC8600 cradle
- E) Scan key
- F) Display
- G) Connector for direct RS232 connection and battery charging
- H) Laser beam output window





# 1 INTRODUCTION

---

## 1.1 KYMAN™ TERMINAL DESCRIPTION

The Kyman™ portable terminal is part of the Datalogic rugged *Mobile@work™* product line. Kyman™ is a light-weight hand-held terminal with advanced barcode scanning, data processing and communications features. It has been conceived to provide the highest productivity and comfort in demanding environments, to link users to data and to each other in transportation and logistics applications such as warehouses, docks, yards, and on the road.

Kyman™ represents a light-weight solution powered by an innovative PC-like architecture.

The various laser scanning models offer excellent reading features including a 2D code model that is optimized for aggressive performance on high-density PDF417 labels, RSS and other 2-D symbols including Composite Codes, and Micro PDF.

Ease of use and reliability are benefits that are valued across all markets. Kyman™ features a bright, easy-to-read 1/8 VGA display and rechargeable, long-lasting Lithium-Ion batteries, which contribute to Kyman™'s universal market appeal. Sealed to IP54 standards, the rugged durability of Kyman™ meets the needs of many industrial environments.

Built to be an open system, the Kyman™ supports the most widespread mobile standards, such as IEEE 802.11b and OpenAir, depending on the PC card used, and it makes communication management extremely straightforward in both new and existing installations.

Communication management to the legacy system takes advantage of the new software product line that includes terminal emulation connectivity for OS/400, Unix, and Microsoft Windows platforms, including the most diffused ERPs, such as SAP R/3.

Kyman™ is fully supported by the *Mobile@work™* CD-ROM containing a vast assortment of Software Development Tools and Utility Programs included in the package.

Kyman™ fills the gap between office automation oriented and pure industrial mobile data collection solutions.

## 1.1.1 Models

The Kyman™ is available in three models:

- Batch;
- RadioReady;
- RF.

These models can have different laser modules: Standard, Long Range, 2D (Raster).

## 1.2 PACKAGE CONTENTS



The Kyman™ terminal package contains:

- Kyman™ terminal;
- User's manual;
- CD-ROM Mobile@work containing Software Development System and Utility programs;
- Li-Ion rechargeable battery pack.

RF-3 and RadioReady models include terminal-specific keyboard overlays.

Any other packages will contain the accessories necessary for the Kyman™ terminal connection to the host computer and to the network: the cradle, power supply, and one or more connection cables.

Remove all the components from their packaging, check their integrity and congruity with the packing documents.

**CAUTION**

*Keep the original packaging for use when sending products to the technical assistance center. Damage caused by improper packaging is not covered under the warranty.*

**NOTE**

*Rechargeable battery packs are not initially charged. Therefore the first operation to perform is to charge them. See paragraph 5.1.*

### 1.3 ACCESSORIES

#### ❑ Cradle

94A151020 CC8600 Transceiver charger

94A151084 CC8600/4 Transceiver charger

Battery charger and optical transceiver for connections between terminal and host computer in RS232 and RS485.

#### ❑ Charger

94A151030 MBC8600 multi-slot battery charger (4 slots)

#### ❑ Batteries

94ACC1130 B-8600 LI BATTERY PACK 2300 mAh@3.6 V

#### ❑ Software

**DL Mobile Configurator™ Enterprise.** It is a Windows-based tool which allows to connect the Datalogic RF DOS terminal to the desired Host system. An easy and flexible tool which allows configuring all terminal and network parameters and managing the mobile unit during the connection.

**DL TCL™ (DL Terminal Emulation Client)** connects Datalogic RF DOS terminal to the Host systems directly.

**MCL-Collection** is a set of integrated tools designed to develop, debug and deploy Mission Critical hand-held device applications. MCL-Collection for Datalogic contains: MCL-Designer, MCL-Loader, MCL-Link, MCLNet for Datalogic.

**Web Client**, a DOS Web browser which brings the web technology into the wireless data collection application.

□ **Power Supply**

FPS18 Power Supply for CC8600 transceiver charger, KYMAN™ terminal (through CAB-4001) and for the MBC8600 multi-slot battery charger:

94ACC4595 FPS18 power supply without cord

94ACC1150 Power cord EU 3- pin

94ACC1160 Power cord AUS 3- pin

94ACC1170 Power cord USA 3- pin

94ACC1180 Power cord UK 3- pin

□ **Cables**

94A054300 cable for RS232 direct connection between the terminal and the PC. It also provides a power jack for the connection to the FPS18.


94A054000 cable for RS232 between the CC8600 cradle and a PC/AT or compatible.

94A054010 cable for RS232 between the CC8600 cradle and a PC/XT or compatible.

94A054030 kit consisting of two cables for Eavesdrop and Modem connections between cradle and Host.

## 2 CONNECTIONS

### 2.1 TERMINAL CONNECTION TO THE HOST COMPUTER



*Before continuing with this phase be sure both the computer and the Kyman™ terminal are turned off.*

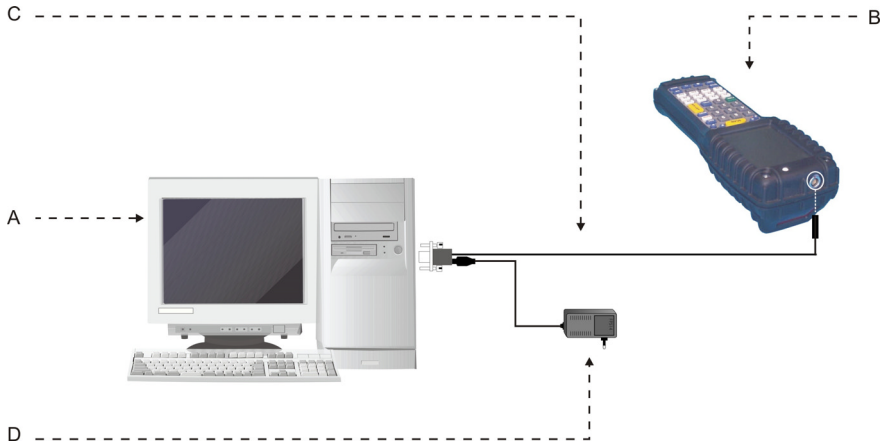
**CAUTION**

#### 2.1.1 Connection Through CC8600 Cradle

The terminal can be connected to a Host through the CC8600 cradle by means of an RS232 interface (with or without an Eavesdrop line), or an RS485 Multidrop interface. See the CC8600 User Manual for details.

#### 2.1.2 RS232 Direct Connection

You can use CAB-4001 to connect the Kyman™ terminal to a host computer to transfer data. This cable also allows connection to an external power supply to charge the batteries.

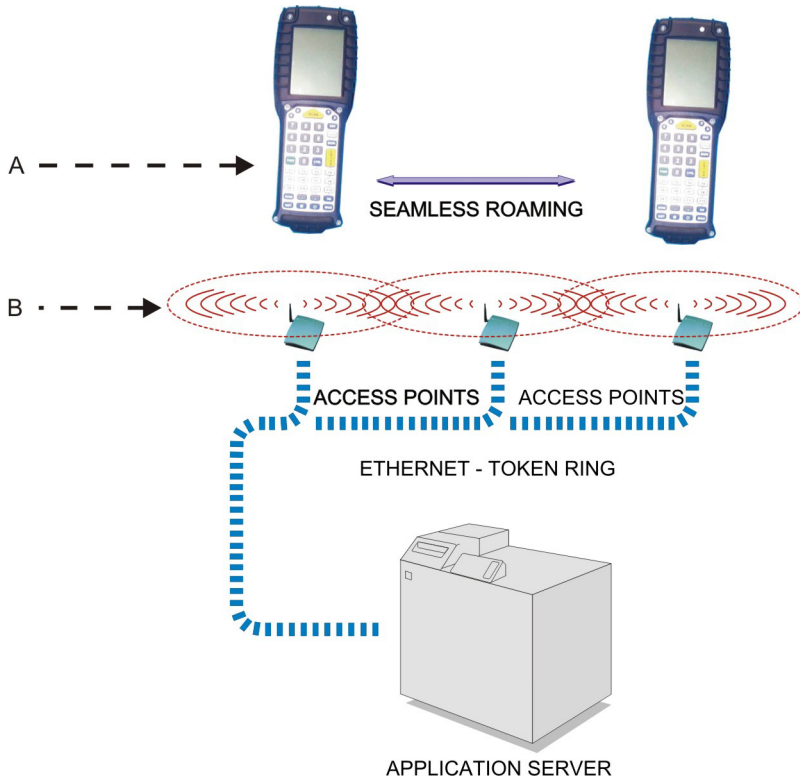


Key:

- A) Host computer
- B) Kyman™ terminal
- C) RS232 cable (CAB-4001)
- D) Power supply

### 2.1.3 RF Connection

Kyman™ RF versions can communicate with the host using the on-board radio frequency module and an Access Point connected to the host computer.



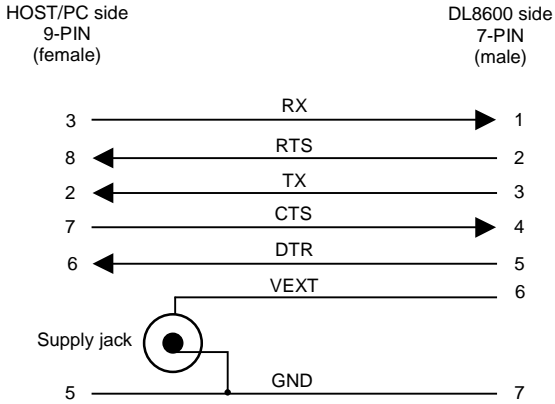
Key:

- A) Kyman™ terminal
- B) Access point

## 2.2 CONNECTION CABLES

The following cable is listed with its order number.

- ❑ **RS232 Direct Connection: CAB-4001 (cable 94A054300)**



## 3 BIOS SETUP MENU

---

### 3.1 GENERAL INFORMATION

The Kyman™ terminal is very versatile and can be adapted to suit many special requirements by configuring certain parameters, which can be changed after the Kyman™ terminal's boot sequence.

The activities of accessing the parameters and their modification are commonly referred to as Kyman™ terminal setup activities.

The parameters have their default values, which are loaded automatically during the booting sequence if the following conditions occur:

- the first time the Kyman™ terminal is booted, as initial setup of the parameters themselves;
- if, during the boot sequence, the BIOS notes that the previously-set configuration parameters might not be complete or correct.

### 3.2 ACTIVATING THE SETUP PROCEDURE

The Kyman™ terminal reads and applies the setup parameters at bootup.

At first the terminal reads the parameters from the CMOS RAM. If the CMOS RAM is corrupted, the parameters are read from the EEPROM memory. If the EEPROM memory is corrupted too, default values are applied to all the parameters.

The BSETUP.EXE program is the only way to modify the Kyman™ terminal parameters; it is a normal DOS program and can be invoked after the Kyman™ terminal boot sequence. The parameter modifications made by BSETUP.EXE take effect at the next boot sequence.

BSETUP.EXE can be run with one of the following two options:

- `BSETUP -C` the program checks the status of the CMOS. If the parameters are incorrect, it asks whether you want to modify them. Otherwise, the program exits. Default is no check;
- `BSETUP -D` with this option you can load the DEFAULT configuration.

In the NEWAUTO.BAT file it is useful to invoke "BSETUP -C", so that if for some reasons the CMOS RAM is corrupted the user is notified.



### 3.3 PASSWORD

The password mechanism is used for protecting access to Kyman™ terminal parameters. If BSETUP.EXE is run with the -C option, it will warn the user about an eventual CMOS corruption before asking for the password. No password is required to be warned about the CMOS memory.

The application recognizes two passwords which are case sensitive:

- A) user defined
- B) the string "degibkdr"

If the user forgets the password, the fixed (B) password provides the key to access the setup procedure.

If the CMOS becomes invalid, bsetup displays a "corrupted password" message and disables the password, allowing the user to directly access setup.

If a wrong password is entered, the program ends returning to the dos prompt. Notice that the password protects only the Kyman™ terminal parameters, not the terminal itself.

The password can be disabled by entering a null string.

### 3.4 THE SETUP MENU AND ITS CONFIGURABLE ITEMS

The actual items present in the BSETUP menus depend on the BSETUP.BIN file and the BIOS version. If the BSETUP.BIN does not match with the BIOS version, BSETUP.EXE will produce an error message.

The setup menu is composed of several pages, every page contains a list of items and every item corresponds to a terminal parameter. There is also an exit page that allows you to save or discard the modifications.

Every page has its own title, written in the upper row of the screen. Every item has a title and a value (the current value). The title is written on the left, the value on the right. The current item is characterized by a dot between the title and the value.

You can navigate through pages, move between items and modify them. You can recognize two types of parameters: valued and ranged. With the ranged parameters, you must enter a valid value. Erroneous values are recognized, and you must re-enter a correct number. Erroneous values cannot be introduced with valued parameters because you can only select from the ones shown.

### 3.5 CHANGING THE VALUES OF THE MENU ITEMS

To change the values of the menu items, you must use the Kyman™ terminal keyboard. To change an item, first go to its page and then select it by moving the dot.

To change the value of the items, you will have to use the keys indicated in the table below.

KEY	FUNCTION
[ESC]	Activates the exit page
Right Arrow	Next page
Left Arrow	Previous page
Down Arrow	Next item
Up Arrow	Previous item
[ENTER]	Valued items: change value cycling through the valid ones Ranged items: enter and exit the modifying mode

### 3.6 STRUCTURE OF THE KYMAN™ SETUP PAGES

The tables below describe the SETUP pages which are available as well as the SETUP items relating to each page.

In the VALUES column, an asterisk or a value in parenthesis indicates the default value.

#### 3.6.1 Console

ITEM	VALUES	DESCRIPTION	NOTES
Scroll	Fixed Virt (*) Track Software	Scrolling mode	See description following the table for further information
Light tout	5s 10s 15s 20s 25s 30s Disable (*)	Timeout (in seconds) for the backlight	
Autorepeat	Enable (*) Disable	Automatic repetition of the keys by keeping them pressed	
Kbd freq	Enable (*) Disable	Keyboard click	
Click freq.	Ranged: 1..100 (Default 3)	Frequency (Hertz x 100) of the keyboard click	
Green LED (kybd. status/batt. low)	User Alpha (*) Scroll	LED management	See description on next page.
Password	String up to 8 characters	Selection of the new password to enter setup	Simply press [ENTER] to disable the password

## Scrolling Mode

The Kyman™ has a CGA compatible display adapter and allows the application to write on a virtual 25 lines by 80 columns display. On the other hand, the user can see only a portion of this virtual display at a time, which we call the physical display.

The "scroll" parameter controls which portion of the virtual display is seen by the user.

- Fixed     the physical display follows the cursor vertically, long lines are automatically wrapped. The keyboard has no effect on the physical display position.
- Virt     the physical display follows the cursor vertically; by enabling the "scroll control" mode the arrows allow both a vertical and horizontal scroll of the logical display.
- Track    the physical display follows the cursor both vertically and horizontally; by enabling the "scroll control" mode the arrows allow both a vertical and horizontal scroll of the logical display.
- Software the physical display position is fixed. It can be moved only by the application software.

**NOTE**

*The "scroll control" mode is not the same as the scroll parameter and is not selected in BSETUP but using the keyboard sequence described in par. 4.3.3.*

## Keyboard Status/Battery Low LED

This is a bi-colored LED. The red color always signals a low battery condition while the meaning of the green color can be selected as follows:

The "User" value causes the green LED to be managed by the application program.

The "Alpha" value causes the green LED to be lit when the keyboard is in Alpha mode.

The "Scroll" value causes the green LED to be lit when the keyboard is in "scroll control" mode.

### 3.6.2 Devices

ITEM	VALUES	DESCRIPTION	NOTES
CPU high	8 MHz 16 MHz (*) 32 MHz	Clock frequency in ON state	See description of Power Management for further information
Com 1	Elect+wake (*) Optical Off Electrical	Select type and use of COM1	
Keyboard	On (*) Wakeup	Enable/disable keyboard as a wakeup source	
RTC	On Wakeup (*)	Enable/disable the RTC Alarm as a wakeup source	
PCMCIA	Disabled Enabled Wake Up Always On (*)	Use of radiofrequency module	

#### PCMCIA

The "Disabled" value causes the PCMCIA to be always disabled.

The "Enabled" value causes the PCMCIA to be powered when the terminal is ON.

The "Wake Up" value causes the PCMCIA to be powered when the terminal is ON or SUSPENDED. It wakes the terminal when it detects traffic on the radio network.

The "Always On" (\*) value causes the PCMCIA to be powered when the terminal is ON or SUSPENDED. This selection speeds up the terminal transition from SUSPEND to ON.

### 3.6.3 Power

ITEM	VALUES	DESCRIPTION
Automatic	On (*) Off	Enable automatic power management
Low speed	1 MHz (*) 2 MHz 4 MHz 8 MHz	Clock frequency in IDLE state
High->low	1/8 s (*) 1/4 s 1/2 s 1 s 4 s 8 s 16 s	Select the period without Primary activity (see Activities) before passing from High speed to Low speed
Low->sleep	8s 16 s 32 s 1 m (*) 4 m 8 m 16 m	Select the period without any activity before passing from the Low speed to SUSPEND.
Sleep->off	Disabled 1 m 8 m 16 m 32 m 1 h (*) 2 h 4 h	Select the period without any activity before passing from SUSPEND to OFF.

#### Automatic

If the Automatic parameter is OFF, all other Power Management parameters have no meaning.

When the Automatic parameter is ON, the Power Management proceeds as follows:

- after the high-low tout selected time the CPU automatically reduces its clock frequency and passes from High speed to Low speed (both frequencies can be set through setup);
- once the CPU is in Low speed and no activity occurs after the programmed timeout it enters the SUSPEND state. The CPU resumes operations when a WAKEUP event occurs, or when the SCAN key is pressed;
- when the CPU is in SUSPEND and no WAKEUP event occurs after the programmed time, it enters the OFF state through which all peripherals are disabled. The CPU resumes operation only when pressing the SCAN key.

### 3.6.4 Activities

The primary activities cause the CPU to pass to High speed, while the secondary ones allow the CPU to stay in Low speed if they are already in this state (see par. 3.6.3).

ITEM	VALUES	DESCRIPTION
Com1	Primary (*) Secondary Off	Indicates the level of activity for UART/IR interface.
LCD	Primary (*) Secondary Off	Indicates the level of activity for video operations (excluding cursor blink).
Keyboard	Primary (*) Secondary Off	Indicates the level of activity for keyboard.
Disk	Primary (*) Secondary Off	Indicates the level of activity for all accesses to flash disk (boot and non-boot).
PCMCIA	Primary (*) Secondary Off	Indicates the level of activity for radiofrequency module.

### 3.7 EXIT FROM THE SETUP PROCEDURE

To end the SETUP procedure, you will have to:

- 1- Select the Exit menu by pressing [ESC]
- 2- Select one of the items by pressing the correct key (an erroneous one re-enters the setup procedure):

KEY	DESCRIPTION	ITEM
Press [S] to activate the function.	Saves the new values in the CMOS memory and EEPROM memory and exits.	CMOS+EEPROM Save & Exit
Press [C] to activate the function.	Saves the new values in the CMOS memory and exits.	CMOS Save & Exit
Press [Q] to activate the function.	Discards the new values and exits.	Discard
Press [D] to activate the function.	Load the default factory values.	Factory parameters

- If you exit with saving, a message appears notifying that the program is about to quit, and you can choose to reboot the Kyman™ terminal to see the effects of the new configuration. Remember that the Kyman™ terminal parameters are used by BIOS at boot-time.
- If you exit with the "Discard" command, no change will affect CMOS and EEPROM memories.
- If you choose the "factory parameters", the application applies it and then re-enters the setup procedure.



## 4 USE AND FUNCTIONING

---

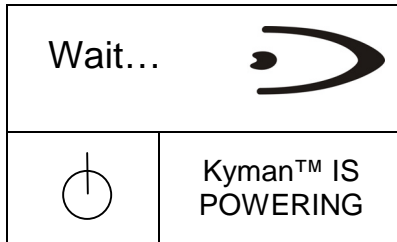
The use of the Kyman™ terminal is subordinate to the application software loaded. Once an application is loaded, barcode scanning can be performed by pressing the SCAN key.

### 4.1 TERMINAL STARTUP

The Kyman™ terminal turns on when the SCAN key is pressed.

For batch models, the prompt is displayed or if present the application program starts.

For radio models, the following popup window is briefly displayed while the radio connects with the base station:



The terminal goes into low power consumption mode (display off), when it is no longer used for more than a programmable timeout (default 1 minute - par. 3.6.3). In this mode it can be awakened (resuming operation) by external events such as a key press, radio transmission, etc. see par. 3.6.2)

If no external events cause wakeup, after another timeout (default 1 hour - par. 3.6.3) the terminal turns off. Upon pressing the SCAN key or trigger, the terminal turns on as initially described.

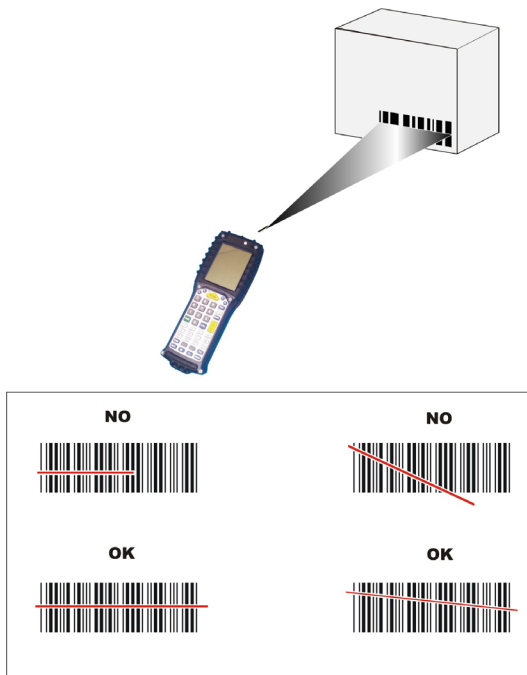
To turn the terminal off, press SHIFT + SCAN key.

## 4.2 BARCODE SCANNING

### 4.2.1 Linear Barcode Scanning

To scan linear barcodes, point the Kyman™ terminal laser beam onto the code from a distance within the reading range while pressing the SCAN key. See the reading diagrams in chapter 6 for the reading range of your model. The laser beam is emitted with a 20° downward tilt angle for easier barcode scanning.

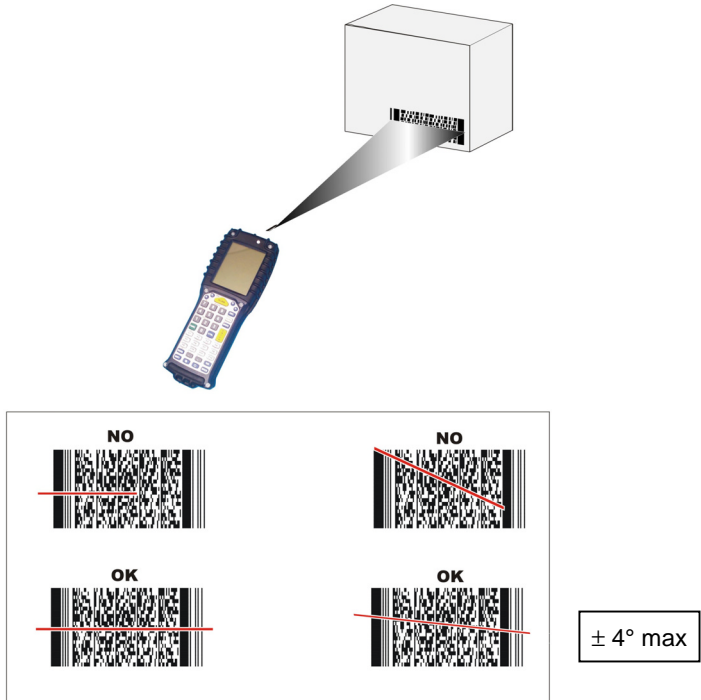
The lighted band emitted by the laser must completely intercept the barcode as shown in the figure below. The emission of an acoustic signal will indicate that the scan has taken place correctly.



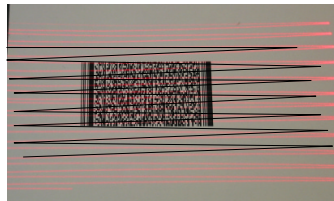
## 4.2.2 2D Barcode Scanning

To scan 2D barcodes, point the Kyman™ terminal laser beam onto the code from a distance within the reading range while pressing the SCAN key. See the reading diagrams in chapter 6 for the reading range of your model. The laser beam is emitted with a 20° downward tilt angle for easier barcode scanning.

The lighted band emitted by the laser must completely intercept the barcode as shown in the figure below.



The terminal automatically recognizes the 2D code and will produce a raster pattern which fully covers the code so that it can be read; therefore you do not have to move the terminal to read the code.



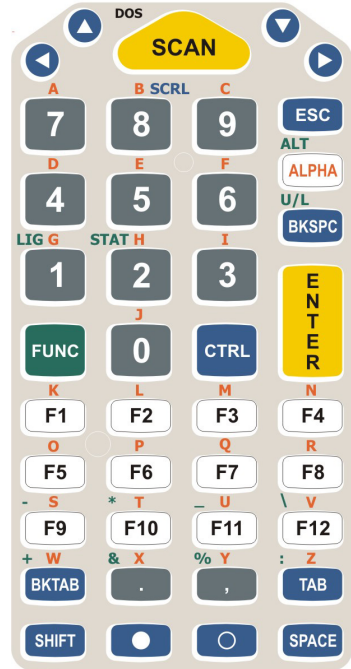
The emission of an acoustic signal will indicate that the scan has taken place correctly.

## 4.3 DESCRIPTION OF THE KEYS

The keyboard is provided in two different layouts, numeric or alphanumeric.











Alphanumeric Keyboard



Numeric Keyboard

### 4.3.1 Power and Display Control Keys

Alphanumeric Keyboard		Numeric Keyboard
	Turns the terminal ON. If already ON, it turns ON the Laser scanner.	
 	Turns the terminal OFF.	 

Alphanumeric Keyboard	Numeric Keyboard
	
<p style="text-align: center;">Turns on/off the display backlight.</p> <p style="text-align: center;">Adjusts the display contrast.</p>	

### 4.3.2 Key Selection

#### Alphanumeric Keyboard

Some keys of the alphanumeric keyboard carry extra symbols and are logically divided with up to 4 sections according to the following figure:



Each section corresponds to a symbol that can be obtained using the corresponding keyboard method according to the following scheme:

- A) function of the key when directly pressed;
- B) function of the key when preceded by a FUNC key press;
- C) function of the key when in Alpha mode;
- D) function of the key when preceded by a SHIFT key press.

## Numeric Keyboard

Some keys of the numeric keyboard carry extra symbols and are logically divided with up to 3 sections according to the following figure:

























Each section corresponds to a symbol that can be obtained using the corresponding keyboard method according to the following scheme:

- A) function of the key when directly pressed;
- B) function of the key when preceded by a FUNC key press;
- C) function of the key when in Alpha mode;

### 4.3.3 Special Key Sequences

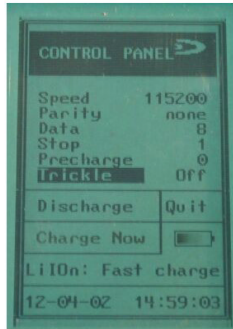
Alphanumeric Keyboard		Numeric Keyboard
	By pressing these keys simultaneously, a system hardware reset is performed.	
	<p>This sequence toggles the arrow keys between the standard and the “scroll control” modes. When in standard mode, the arrow keys perform several functions depending on the current application running. When in “scroll control” mode, the arrows allow scrolling the physical display on the virtual one (see par. 3.6.1). You can enable the green LED to signal the keyboard state (see par. 3.6.1).</p>	

Alphanumeric Keyboard		Numeric Keyboard
 	<p>The FUNC and Alpha key press preceding any keyboard key corresponds to the ALT + key press on a standard PC.                      Ex.: FUNC + Alpha + F8 corresponds to ALT + F8 on a PC.</p>	 
 	<p>The FUNC and CTRL key press preceding any keyboard key corresponds to the CTRL + key press on the PC.                      Ex.: FUNC + CTRL + F8 corresponds to CTRL + F8 on a PC.</p>	 
	<p>The SHIFT key press preceding any keyboard key corresponds to the SHIFT + key press on the PC.                      Example for the <b>alphanumeric</b> keyboard: SHIFT + 5 corresponds to the % character.                      Example for <b>both</b> keyboards: SHIFT + "a" corresponds to the "A" character.</p>	
 	<p>If the CTLPANEL.EXE TSR is running, this sequence invokes the interface (see par. 4.4 for details).</p>	 
	<p>The FUNC key press preceding any keyboard key enables the character in green positioned above the key.                      Example for the <b>alphanumeric</b> keyboard: FUNC + 5 corresponds to the F5 key on the PC.                      Example for the <b>numeric</b> keyboard: FUNC + BKTAB corresponds to the "+" character.</p>	
	<p>The Alpha key press toggles the keyboards between the alphanumeric and the numeric modes. When in alphanumeric mode, it is possible to digit all the alphabetic characters positioned on or above the keys.</p>	
 	<p>This sequence toggles the upper case characters on and off.</p>	 

## 4.4 CONTROL PANEL

If the CTLPANEL.EXE TSR runs, it is possible to visualize the control panel on the Kyman™ display by pressing:

- FUNC - W in the alphanumeric keyboard;
- FUNC - 2 in the numeric keyboard.



You can manage each item by directly pressing the arrow keys:

<up arrow>	Previous item
<down arrow> or TAB	Next item
<left arrow>	Previous parameter value
<right arrow> or ENTER	Next parameter value

The upper part of control panel area allows modifying the cradle communication parameters. Every time the Kyman™ is inserted into the CC8600 cradle it sends the configuration parameters to the cradle. Then, the CC8600 resets to its default values every time the Kyman™ is extracted. It is possible to cause the cradle to ignore the new configuration during the terminal insertion by running the CTLPANEL.EXE with the -I option.

In this area it is also possible to select different battery charging options:

- **Precharge:** allows setting a timeout between terminal insertion into the cradle and the beginning of a new battery charging cycle. This is important when the terminal is often inserted into the cradle to download data and not to charge the battery, in order to save battery life. The timeout can also be infinite (never charge). In this case the terminal can be charged only with the command Charge now.



- **Trickle:** if enabled a slow battery charge is started during the precharge timeout. The slow charge is also enabled in ambient temperatures from 0° to 10° C;

If the terminal is powered by serial cable or inserted into the cradle, by selecting the virtual "Discharge" or "Charge Now" buttons and pressing the Enter key on the keyboard you can perform the following actions:

- **Discharge:** immediately starts a battery discharge cycle;
- **Charge now:** immediately starts a battery charge cycle.

On the lower part of the screen it is possible to view date, time and charger status information. The charger status is shown only if the terminal is powered from the serial cable or inserted into the cradle. The possible values are:

- **Slow charge:** the temperature is too low or high to start the fast charge;
- **Fast charge:** the charger is working;
- **End charge:** the battery is fully charged and the charger is stopped;
- **Precharge:** waiting for the precharge timeout;
- **Discharging:** the battery is being discharged;
- **Failure:** signals some battery charging errors.

## 4.5 STATUS INDICATORS

### 4.5.1 Kyman™ Indicators

The Kyman™ provides one LED and beeper signaling the terminal status.

LED	STATUS	
<b>Keyboard status/ Battery Low</b>	Green constant	it is constant when the keyboard is in "scroll control" or "alpha" mode depending on the setup configuration.
	Red blinking	it blinks when the battery is running down.

BEEPER	STATUS
single beep	insertion into cradle.
double beep	extraction from cradle.
3 beeps	battery low
Low High Low*	good read.

\* this signal can be modified by the application program.

## 4.5.2 Charging Status Indicators

If battery charging is performed by the power supply connected through the RS232 cable, the battery charging status can be checked in the Control Panel (see par. 4.4).

When using the CC8600 cradle to charge the Kyman™ batteries, the charging indications are signaled by the CC8600 LEDs as described in the following tables:

### CC8600 Terminal Battery Status LED

COLOR	STATUS
<b>Green pulse:</b>	Power on/ terminal not inserted
<b>Green blinking:</b>	Battery slow charging
<b>Red constant:</b>	Battery fast charging
<b>Green constant:</b>	Battery charged
<b>Orange blinking:</b>	Battery failure

### CC8600 Spare Battery Status LED

COLOR	STATUS
<b>Green blinking:</b>	Battery slow charging
<b>Red constant:</b>	Battery fast charging
<b>Green constant:</b>	Battery charged
<b>Orange blinking:</b>	Battery failure
<b>Green/Red Alternating</b>	Battery discharging



**NOTE**

*Not all types of battery failures can be signaled by the battery status LED.*

## 4.6 FILE TRANSFER

The WinDTP file transfer utility included on the CD-ROM allows you to perform file transfer between the Host and Kyman™ Terminal. See the DL-DTP User's Manual for details on installation and functioning.

The same option is also available in the Mobile Configurator Enterprise program, (unlicensed version) included in the CD-ROM.

## 5 MAINTENANCE

---

**NOTE**

*Rechargeable battery packs are not initially charged. Therefore the first operation to perform is to charge them. See par. 5.1.*

### 5.1 CHARGING THE BATTERIES

The battery autonomy varies according to factors, such as the frequency of barcode scanning, of RF usage and of BIOS settings.

When the batteries are low, the LED blinks and a warning acoustic signal is emitted.

It is possible to recharge the batteries by placing the Kyman™ in its cradle or by using the Kyman™ cable (see par. 2.1.2).

The charging process is signaled by the red constant LED of the CC8600 (see par. 4.5).

If the battery pack is removed from the terminal, it can be recharged by inserting it into the recharging slot available in the cradle.

### 5.2 REPLACING THE BATTERIES

To correctly replace the batteries, proceed as follows.

- 1- Turn off the Kyman™ terminal.
- 2- Pull the lock button as indicated in the figure below:



- 3- Remove the battery pack:



- 4- Insert the new battery pack and press it back until the lock button is automatically closed:



**CAUTION**

*Dispose of the old batteries as required by the relevant laws in force.*

### **5.3 CLEANING THE TERMINAL**

Periodically clean the Kyman™ terminal with a slightly dampened cloth. Do not use alcohol, corrosive products or solvents.

## 6 TECHNICAL FEATURES

### 6.1 TECHNICAL DATA

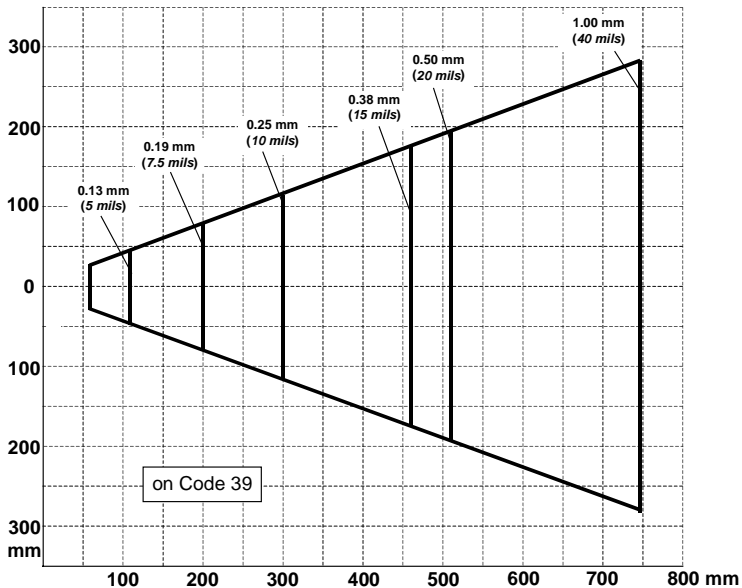
	Kyman™ Std	Kyman™ LR	Kyman™ 2D
<b>Optical Features</b>			
Maximum resolution	0.13 mm / 5 mils	0.25 mm / 10 mils	0.17 mm / 6.6 mils
Skew angle	± 55 °	± 60°	± 30°
Pitch angle	± 65°	± 65°	± 15°
Scan rate - horizontal	35 ± 5 scan/sec	35 ± 5 scan/sec	295 ± 5 scan/sec
Scan rate - vertical			10 ± 2 scan/sec
Depth of field	See reading diagrams on the next page		
Light source laser scanner	VLD, wavelength 630~680 nm		
Safety class	Class II EN 60825-1/CDRH		
<b>Electrical Features</b>			
Power			
DC supply	12 Vdc to 24 Vdc ± 5%		
Battery pack	1 cell Li-Ion 2300 mAh@3.6 V (nominal)		
<b>Hardware Features</b>			
FLASH	8 MB		
RAM	8 MB		
EEPROM	256 bytes		
Microprocessor	32 bit - AMD486		
Calendar/clock	Quartz RTC, time and date programmable with automatic management of leap years		
<b>Mechanical Features</b>			
Dimensions (LxWxH)	227x83x60 mm		
Weight	520 g. with battery and PCMCIA		
Buzzer	piezoelectric buzzer		
Two-color LED	see par. 4.5		
Display	High contrast display, graphic LCD with 240 x 160 pixel resolution, backlight		
Keyboards	41 silicone covered rubber keys		
<b>Environmental Features</b>			
Working temperature	-10° to +50 °C / +14° to 122 °F		
Storage temperature	-20° to +70 °C / -4° to 158 °F		
Humidity	90% non condensing		
Protection	IP54		
ESD protection	4 KV contact discharge, 8 KV air discharge		
Drop resistance	1.5 m		

Programming Features	
Operating system	MS-DOS 6.22
RF terminal emulation	VT100, VT220, IBM5250, HP700, 3270
Decoded 1D barcodes	EAN/UPC; Code 39; 2/5 Codes; Plessey; Codabar; Code 128; MSI; Code 93; Code 11
Decoded 2D barcodes (for 2D models only)	PDF417
Communication Features	
Optical interface	IrDA 1.0
CC8600 interface	Cradle-terminal interface via IrDA
Serial interface	RS232
RF Communication Features	
Frequency	2.4 GHz spread spectrum
Power output	In compliance with ETS 300-328

## 6.2 READING DIAGRAMS

### Standard

Reading Zones (10° skew angle)

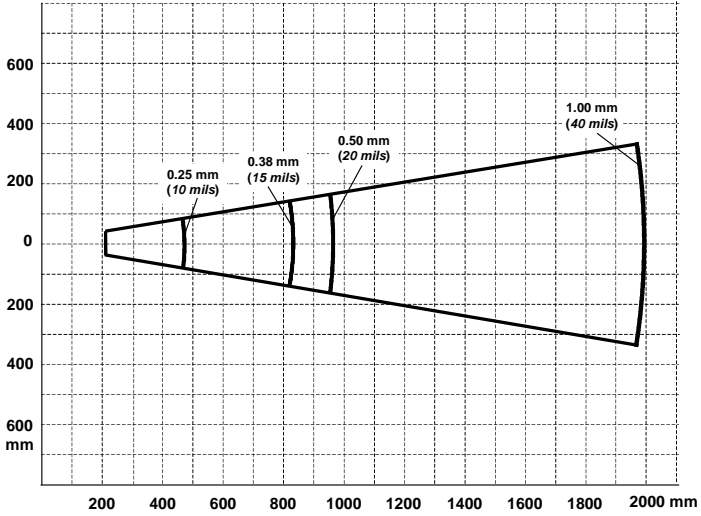


Minimum reading distance:

85 mm on 0.13 mm (5 mils) codes; all others 60 mm.

### Long Range

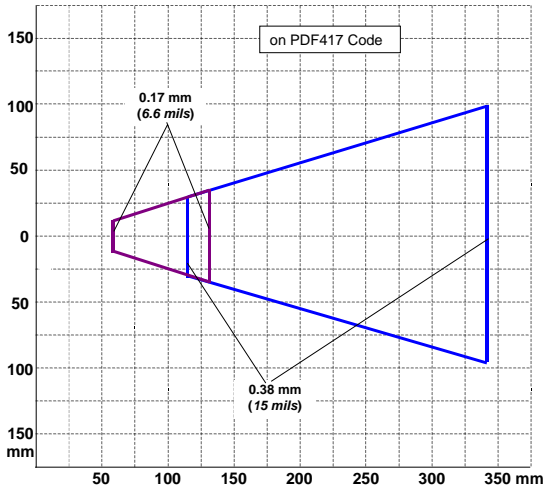
Reading Zones (10° skew angle)



Minimum reading distance:  
300 mm on 0.25 mm (10 mils) codes; all others 210 mm.

### 2D

Reading Zones (10° skew angle)



## 7 TEST CODES

---

### High Density Codes

0.25 mm (10 mils)

Code 39



2/5 Interleaved



Code 128




---

80%

EAN 13



80%

EAN 8





### Medium Density Codes

0.38 mm (15 mils)

Code 39



Interleaved 2/5



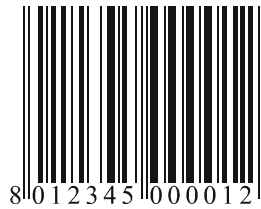
Code 128



---

100%

EAN 13



100%

EAN 8



## Low Density Codes

0.50 mm (20 mils)

Code 39



Interleaved 2/5



Code 128



EAN 13



EAN 8



# GLOSSARY

---

## **Access Point**

A device that provides transparent access between Ethernet wired networks and IEEE 802.11 interoperable radio-equipped mobile units (Mus). Datalogic hand-held computers, or other devices equipped with a PCMCIA slot, communicate with wired networks using Access Points (AP). The mobile unit may roam among the APs in the same subnet while maintaining a continuous, seamless connection to the wired network.

## **Barcode**

A pattern of variable-width bars and spaces which represents numeric or alphanumeric data in machine-readable form. The general format of a barcode symbol consists of a leading margin, start character, data or message character, check character (if any), stop character, and trailing margin. Within this framework, each recognizable symbology uses its own unique format.

## **Baud Rate**

A measure for data transmission speed.

## **BIOS**

Basic Input Output System. A collection of ROM-based code with a standard API used to interface with standard PC hardware.

## **Bit**

Binary digit. One bit is the basic unit of binary information. Generally, eight consecutive bits compose one byte of data. The pattern of 0 and 1 values within the byte determines its meaning.

## **Bits per Second (bps)**

Number of bits transmitted or received per second.

## **Byte**

On an addressable boundary, eight adjacent binary digits (0 and 1) combined in a pattern to represent a specific character or numeric value. Bits are numbered from the right, 0 through 7, with bit 0 the low-order bit. One byte in memory can be used to store one ASCII character.

## **Data Communications Equipment (DCE)**

A device such as a modem that is designed to attach directly to a DTE (Data Terminal Equipment) device.

**Data Terminal Equipment (DTE)**

A device such as a terminal or printer that is designed to attach directly to a DCE (Data Communications Equipment) device.

**Decode**

To recognize a barcode symbology (e.g., Codabar, Code 128, Code 3 of 9, UPC/EAN, etc.) and analyze the content of the barcode scanned.

**DOS**

Disk Operating System. This is basic software that allows you to load and use software applications on your computer.

**EEPROM**

Electrically Erasable Programmable Read-Only Memory. An on-board non-volatile memory chip.

**Flash Disk**

Non-volatile memory for storing application and configuration files.

**Host**

A computer that serves other terminals in a network, providing services such as network control, database access, special programs, supervisory programs, or programming languages.

**Liquid Crystal Display (LCD)**

A display that uses liquid crystal sealed between two glass plates. The crystals are excited by precise electrical charges, causing them to reflect light outside according to their bias. They use little electricity and react relatively quickly. They require external light to reflect their information to the user.

**Light Emitting Diode (LED)**

A low power electronic light source commonly used as an indicator light. It uses less power than an incandescent light bulb but more than a Liquid Crystal Display (LCD).

**RAM**

Random Access Memory. Data in RAM can be accessed in random order, and quickly written and read.

**RF**

Radio Frequency.

**Terminal**

A Datalogic portable computer product.

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**DL8600 Laser Hand-Held PC**  
**DL8600/RR Laser Hand-Held PC**

e tutti i suoi modelli  
and all its models  
et tous ses modèles  
und seine modelle  
y todos sus modelos

sono conformi alle Direttive del Consiglio Europeo sottoelencate:  
are in conformity with the requirements of the European Council Directives listed below:  
sont conformes aux spécifications des Directives de l'Union Européenne ci-dessous:  
den nachstehenden angeführten Direktiven des Europäischen Rats:  
cumple con los requisitos de las Directivas del Consejo Europeo, según la lista siguiente:

<b>89/336/EEC EMC Directive</b>	e and et und y	<b>92/31/EEC, 93/68/EEC</b>	emendamenti successivi further amendments ses successifs amendements späteren Abänderungen succesivas enmiendas
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Basate sulle legislazioni degli Stati membri in relazione alla compatibilità elettromagnetica ed alla sicurezza dei prodotti.

On the approximation of the laws of Member States relating to electromagnetic compatibility and product safety.

Basées sur la législation des Etates membres relative à la compatibilité électromagnétique et à la sécurité des produits.

Über die Annäherung der Gesetze der Mitgliedsstaaten in bezug auf elektromagnetische Verträglichkeit und Produktsicherheit entsprechen.

Basado en la aproximación de las leyes de los Países Miembros respecto a la compatibilidad electromagnética y las Medidas de seguridad relativas al producto.

---

Questa dichiarazione è basata sulla conformità dei prodotti alle norme seguenti:

This declaration is based upon compliance of the products to the following standards:

Cette déclaration repose sur la conformité des produits aux normes suivantes:

Diese Erklärung basiert darauf, daß das Produkt den folgenden Normen entspricht:

Esta declaración se basa en el cumplimiento de los productos con las siguientes normas:

**EN 55022, August 1994:** LIMITS AND METHODS OF MEASUREMENTS OF RADIO DISTURBANCE CHARACTERISTICS OF INFORMATION TECHNOLOGY EQUIPMENT (ITE)

**EN 61000-6-2, April 1999:** ELECTROMAGNETIC COMPATIBILITY (EMC). PART 6-2: GENERIC STANDARDS - IMMUNITY FOR INDUSTRIAL ENVIRONMENTS

Lippo di Calderara, 16/01/2003

Ruggero Cacioppo  
Quality Assurance Laboratory Manager

DATALOGIC S.p.A.,  
Via Candini, 2  
40012 - Lippo di Calderara  
Bologna - Italy



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**DL8600/RF-3 Laser Hand-Held PC**

e tutti i suoi modelli  
and all its models  
et tous ses modèles  
und seine modelle  
y todos sus modelos

sono conformi alla Direttiva del Consiglio Europeo sottoelencata:  
are in conformity with the requirements of the European Council Directive listed below:  
sont conformes aux spécifications de la Directive de l'Union Européenne ci-dessous:  
der nachstehenden angeführten Direktive des Europäischen Rats entsprechen:  
cumple con los requisitos de la Directiva del Consejo Europeo, según la lista siguiente:

**1999/5/EEC R&TTE**

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Diese Erklärung basiert darauf, daß das Produkt den folgenden Normen entspricht:  
Esta declaración se basa en el cumplimiento de los productos con las siguientes normas:

**EN 60950-1, December 2001:**

INFORMATION TECHNOLOGY EQUIPMENT – SAFETY –  
PART 1: GENERAL REQUIREMENTS

**ETSI EN 300 328-2, December 2001:**

ELECTROMAGNETIC COMPATIBILITY AND RADIO SPECTRUM MATTERS (ERM); WIDEBAND TRANSMISSION SYSTEMS; DATA TRANSMISSION EQUIPMENT OPERATING IN THE 2,4 GHZ ISM BAND AND USING SPREAD SPECTRUM MODULATION TECHNIQUES; PART 2: HARMONIZED EN COVERING ESSENTIAL REQUIREMENTS UNDER ARTICLE 3.2 OF THE R & TTE DIRECTIVE

**ETSI EN 301 489-17, September 2000:**

ELECTROMAGNETIC COMPATIBILITY AND RADIO SPECTRUM MATTERS (ERM); ELECTROMAGNETIC COMPATIBILITY (EMC) STANDARD FOR RADIO EQUIPMENT AND SERVICES; PART 17: SPECIFIC CONDITIONS FOR WIDEBAND DATA AND HIPERLAN EQUIPMENT

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