DRAGON™ M SERIES

QUICK REFERENCE

DATALOGIC

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

DRAGON™ M Series

Ed.: 11/2005

Preliminary

CONTENTS

UPDATES AND LANGUAGE AVAILABILITY

UK/US

The latest drivers and documentation updates for this product are available on Internet.
Log on to : www.datalogic.com

I

Su Internet sono disponibili le versioni aggiornate di driver e documentazione di questo prodotto. Questo manuale è disponibile anche nella versione italiana.
Collegarsi a : www.datalogic.com

F

Les versions mises à jour de drivers et documentation de ce produit sont disponibles sur Internet. Ce manuel est aussi disponible en version française.
Cliquez sur : www.datalogic.com

D

Im Internet finden Sie die aktuellsten Versionen der Treiber und Dokumentation von diesem Produkt. Die deutschsprachige Version dieses Handbuches ist auch verfügbar.
Adresse : www.datalogic.com

E

En Internet están disponibles las versiones actualizadas de los drivers y documentación de este producto. También está disponible la versión en español de este manual.
Dirección Internet : www.datalogic.com

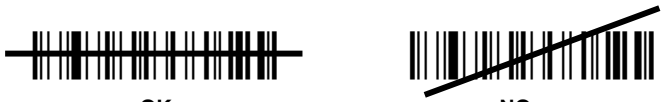
USING DRAGON™ M

The DRAGON™ M series laser gun can be used with either an OM-DRAGON™ cradle or STARGATE™ radio base station to build a Cordless Reading System for the collection, decoding and transmission of barcoded data.

DRAGON™ M laser guns automatically scan barcodes **at a distance**. Simply aim and pull the trigger.

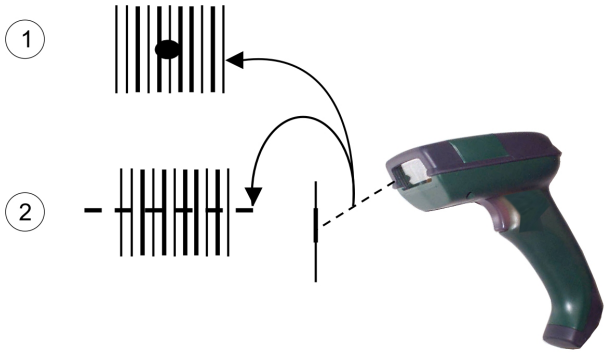
SCAN LINE POSITION

Code scanning is performed along the scan line emitted from the reading window. This line must cross the entire code.



OK **NO**

AIMING SYSTEM



DRAGON™ M provides a programmable aiming system. If enabled, the scan line emitted from the reading window is preceded by a red spot which must illuminate the code center to get the best reading performance (see figure above, ①). Once the defined timeout is reached, the red spot disappears and is followed by the scan line to start the code scanning.

After Dragon™ M Setup, read one of the following codes to set desired aiming system timeout.

◆ aiming system disabled

300 ms

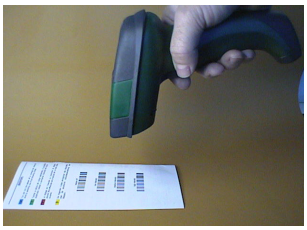
500 ms

1 sec

READING ANGLE

Successful scanning is obtained by tilting the reader with respect to the barcode to avoid direct reflections that impair the reading performance, see the figure below.

OK



Not Advised

SETUP

DRAGON™ M/OM-DRAGON™ Stand Alone Configuration

1. Connect an OM-DRAGON™ cradle to the Host. For installation and connection information see the OM-DRAGON™ Quick Reference Manual.
2. Charge the DRAGON™ M battery using an OM-DRAGON™ or the C-DRAGON™ charger as described in this Quick Reference manual. A full charge takes 2 hours with NiMh battery models.
3. Configure the laser gun as described in this Quick Reference - **DRAGON™ M/OM-DRAGON™ Stand Alone Setup**.
4. Configure the OM-DRAGON™ cradle. See OM-DRAGON™ Configuration in the OM-DRAGON™ Quick Reference.

or

DRAGON™ M/STAR-System™ Configuration

1. Charge the DRAGON™ M battery using an OM-DRAGON™ or the C-DRAGON™ charger as described in this Quick Reference manual. A full charge takes 2 hours with NiMh battery models.
2. Configure the laser gun as described in this Quick Reference - **DRAGON™ M/STAR-System™ Setup**.

CHARGING THE BATTERIES

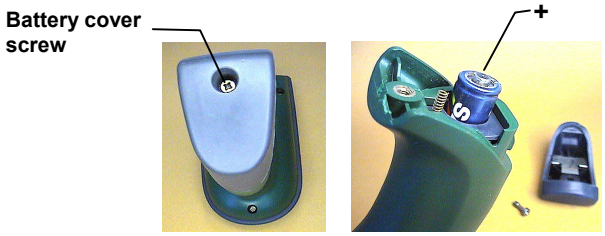
Once the OM-DRAGON™ is powered, you can charge the laser gun's batteries:

Place the DRAGON™ M into the OM-DRAGON™ cradle. The red LED on the cradle goes on.

The battery is completely charged when the green LED on the cradle goes on.

After many recharging cycles NiMh and NiCd batteries may tend to lose their operating autonomy. This condition can be overcome by inserting the DRAGON™ M into the OM-DRAGON™ / C-DRAGON™ charger and pressing the "battery reconditioning" button (see below).

When the above procedure is no longer effective, the batteries must be changed. To change the batteries of your laser gun, unscrew the battery cover screw, replace the old batteries with new ones, then screw the battery cover back into place. (See the following figures).



NiMh, NiCd or Alkaline

CAUTION

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

DRAGON™ M CONFIGURATION

DRAGON™M/OM-DRAGON™ STAND ALONE SETUP

When the OM-Dragon™ cradle is connected and powered, configure the Dragon™ M by reading the following codes in the given sequence and follow the instructions.

Note: for the numeric code selection of steps 3, 4, and 5 use the table at the end of this Quick Reference.

1. Restore Dragon™ M Default

2. Enter Configuration

3. Set Date

+

six digits for Day, Month and Year (DDMMYY).

4. Set Time

+

four digits for Hours and Minutes (HHMM).

5. Set Radio Address

+

four digits for the Dragon™ M Address
(from 0000 to 1999).

All readers used in the same area must have different addresses.

6. Exit and Save Configuration

7. Read the **Bind** code to pair the Dragon™ M to the OM-Dragon™ cradle.

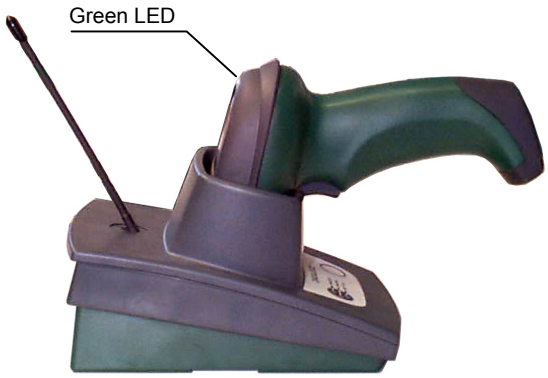
The reader is dedicated to the cradle. Any previously **bound** reader will be excluded.

To connect several readers to the same cradle see the following section "Using Multiple Readers with Same Cradle".

Bind

The green LED on the Dragon™ M will blink: the reader is ready to be inserted into the cradle.

8. Firmly insert the reader into the cradle within 10 seconds, a beep will be emitted, signaling that the OM-Dragon™ cradle has been paired to the Dragon™ M, and the green LED on the reader will go off.



YOUR READER IS NOW CONFIGURED TO READ BARCODES USING THE DEFAULT VALUES.

9. Configure the OM-Dragon™ cradle, refer to the “OM-Dragon™ Quick Reference”.

USING MULTIPLE READERS WITH SAME CRADLE

If you want to use several readers associated with the same cradle, you must first **Bind** the cradle with one of the readers (see previously described configuration procedure).

Successive readers can be associated with the same cradle by following the configuration procedure substituting the **Bind** command with **Join**.

7. Join

The green LED on the Dragon™ M will blink: the reader is ready to be inserted into the cradle. **Complete step 8.**

END of procedure.

CAUTION

*If the cradle is not **Bound** to a reader, its address assumes a random value which can cause conflicts and malfunctions to other cradles within its range.*

DRAGON™M/STAR-MODEM™ STAND ALONE SETUP

To configure a Dragon™ M reader to communicate with STAR-Modem™ in Stand Alone Mode, follow the "Dragon™ M/OM-Dragon™ Stand Alone Setup" procedure substituting steps 6 and 7 with those below:

6. STAR-Modem™ Address

Read the code above and the four-digit address of the STAR-Modem™.

Exit and Save Configuration

7.

END of procedure.

YOUR READER IS NOW READY TO READ BARCODES.

DRAGON™M/STAR-SYSTEM™ SETUP

The following procedure allows configuring a Dragon™ M reader to communicate with various STAR-System™ devices such as STARGATE™ RF base stations:

1. Restore Dragon™ M Default

2. Enter Configuration

3. Set Date

+

six digits for Day, Month and Year (DDMMYY).

4. Set Time

+

four digits for Hours and Minutes (HHMM).

5. Set the connection according to the length of the codes to be read:

Code Length ≤240 Characters

Code Length >240 Characters
(not for systems with OM-Dragon™ as Master)

6. Set Radio Address

+

four digits from the Numeric Table for the Dragon™ M Address (from 0000 to 1999).

All readers used in the same area must have different addresses.

7. Set First STAR-System™ Address

+

four digits from the Numeric Table in the range 0000 to 1999

8. Set Last STAR-System™ Address

+

four digits from the Numeric Table in the range 0000 to 1999

NOTE

Whenever the system is composed of a single base station, the first and last base station addresses (steps 7 and 8) must have the same value.

9. Exit and Save Configuration

END of procedure.

YOUR READER IS NOW READY TO READ BARCODES.

RADIO TIMEOUT

After a code has been read and transmitted, the radio remains active for the amount of time set by the Radio Timeout parameter. This is particularly useful when the Host is expected to send a reply message to the gun. This parameter depends heavily on the application and is therefore provided here for system optimization according to your application.

The default value for this parameter is 008 (about 1/2 sec.). This is a reasonable value for most applications, but it could need to be changed according to the following considerations:

- If your application does not require the host to send messages to the gun(s), (which is true for all Wedge applications), the best setting for the radio timeout is the minimum value 001 which is about 1/16 of a second. This allows maximum battery autonomy.
- When your application requires bi-directional communications, the radio timeout must be set according to the number of guns and the amount of traffic so that no host messages are lost.

NOTE

Setting the radio timeout to 000 causes the radio to always be ON. If you do this, the gun will accept messages from the host at any time, but the batteries will discharge quickly.

To change the default parameter, follow the instructions below:

Note: for the numeric code selection use the table at the end of this Quick Reference.

1. Enter Configuration

2. Radio Timeout

+

3 digits in the range 000-255:
000 = disables Radio Timeout (always on)
001 to 255 = timeout from .063 to 16 seconds.

3. Exit and Save Configuration

DRAGON™ M DEFAULT CONFIGURATION

DATA FORMAT

code identifier disabled, field adjustment disabled, code length not transmitted, character replacement disabled, time stamping disabled, time stamping delimiter disabled

READING PARAMETERS

hardware trigger, trigger active level, no trigger timeout, one read per cycle, safety time 0.5 sec, beeper intensity high, tone 2, aiming spot = disabled

DISPLAY/KEYPAD PARAMETERS

Font size = small, display timeout = 8 sec., backlight = off, display mode = local echo, keypad enabled, KeyID characters: left = '<', center = '=', right = '>'

DECODING PARAMETERS

ink spread enabled, overflow control enabled, interdigit control enabled, decoding safety = one read, Puzzle Solver™ disabled

CODE SELECTION

enabled codes

- EAN 8/EAN 13 / UPC A/UPC E without ADD ON
  check digit transmitted, no conversions
- Interleaved 2/5
  check digit control and transmission, variable length code; 4-99 characters
- Standard Code 39
  no check digit control, variable length code; 1-99 characters
- Code 128
  variable length code; 1-99 characters

disabled codes

EAN 128, ISBT128, Code 93, Codabar, pharmaceutical codes, RSS codes, MSI, Plessey, Telepen, Delta IBM, Code 11, Code 16K, Code 49

ADVANCED FORMATTING PARAMETERS

concatenation disabled, no advanced formats defined

RADIO PARAMETERS

radio protocol timeout = 2 seconds, power-off timeout = 4 hours, transmission mode = one-way, beeper control for radio response = normal, single store disabled, batch mode disabled

TECHNICAL FEATURES

Electrical Features		
Battery Type	2 AA NiMh* batteries	
Time of recharge NiMh	2 hours	
Operating autonomy (typ. continuous reading)	60,000 reads - NiMh	
Display (Only available with some models)	LCD 4 lines x 16 chars Programmable font and backlight	
Indicators	Laser On / battery low LED (red) Programmable Beeper	
Laser Features	**Standard**	**LR**
Power (typical) in mW	0.9 mW	1.4 mW
Light Source	VLD in the range between 630~680 nm	
Scan rate	35 ± 5 scans/sec	
Typical reading field width	see reading diagram	
Max. resolution	0.12 mm, 5 mils	0.25 mm, 10 mils
PCS minimum (Datalogic Test Chart)	15%	40%
Scan angle	42°	23°
Laser Safety Class	2 (EN 60825-1 / CDRH)	
Radio Features	**European Models**	**USA Models**
Working frequency	433.92 MHz	910 MHz
Bit rate	19200 baud	36800 baud
Range (in open air)	50 m.	30 m.
System Configuration	**OM-DRAGON™**	**STARGATE™**
Max. number of devices per base station	32	255
Max. number of devices in the same reading area	2000	
Environmental Features		
Working Temperature	-10 to + 40 °C / +14 to +104 °F	
Storage Temperature	-20 to + 50 °C / -4 to +140 °F	
Humidity	90% non condensing	
Drop resistance (on concrete) with display without display	 1.5 m 1.8 m	
Protection	sealed against rain and dust	
Mechanical Features		
Weight (with batteries)	about 340 g.	
Dimensions	203 x 117 x 69 mm	
Material	ABS and Polycarbonate molded with rubber	

* It is possible to employ also NiCd or non-chargeable Alkaline AA batteries.

WARRANTY

Datalogic warranties this product against defects in workmanship and materials, for a period of 24 months from the date of shipment, provided that the product is operated under normal and proper conditions.

Datalogic has the faculty to repair or replace the product, these provisions do not prolong the original warranty term. The warranty does not apply to any product that has been subject to misuse, accidental damage, unauthorized repair or tampering.

SERVICES AND SUPPORT

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

- **PRODUCTS**

  Search through the links to arrive at your product page where you can download specific **Manuals** and **Software & Utilities** including:

  - **DL Sm@rtSet™** a Windows-based utility program which allows device configuration using a PC. It provides RS232 interface configuration as well as configuration barcode printing.

- **SERVICES & SUPPORT**

  - **Datalogic Services** - Warranty Extensions and Maintenance Agreements

  - **Authorised Repair Centres**

- **CONTACT US**

  E-mail form and listing of Datalogic Subsidiaries

COMPLIANCE

This device must be opened by qualified personnel only.

The batteries must be removed before opening the device.

FCC COMPLIANCE

Modifications or changes to this equipment without the expressed written approval of Datalogic could void the authority to use the equipment.

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.

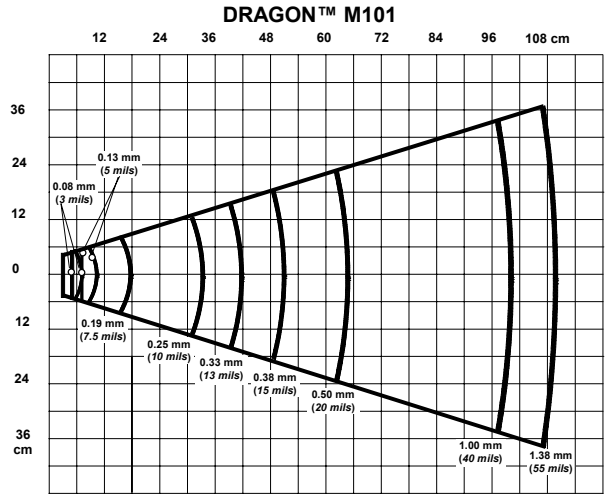
This device contains FCC ID OMJ0015.

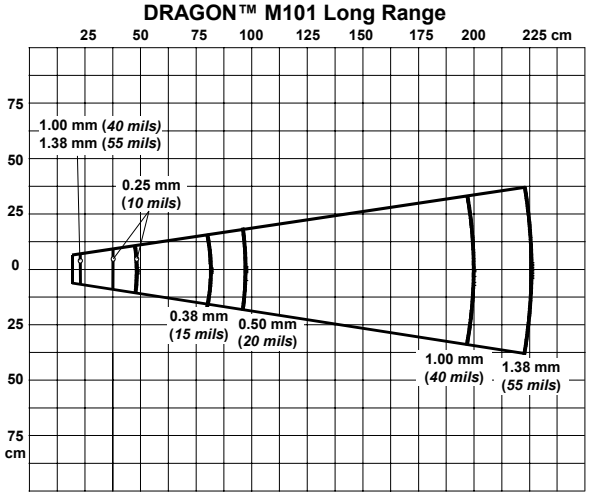
RADIO COMPLIANCE

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.

WEEE COMPLIANCE

READING DIAGRAMS





NUMERIC TABLE


0


1


2


3


4


5


6


7


8


9

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Bologna - Italy

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Dragon M101 433 MHz, Cordless Bar Code Reader
Dragon M101/D 433 MHz, Cordless Bar Code Reader
Dragon M101/D LR 433 MHz, Cordless Bar Code Reader

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

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:

ETSI EN 301 489-3 v.1.4.1, AUGUST 2002:	ELECTROMAGNETIC COMPATIBILITY AND RADIO SPECTRUM MATTERS (ERM); ELECTROMAGNETIC COMPATIBILITY (EMC) STANDARD FOR RADIO EQUIPMENT AND SERVICES; PART 3: SPECIFIC CONDITIONS FOR SHORT-RANGE DEVICES (SRD) OPERATING ON FREQUENCIES BETWEEN 9 KHZ AND 40 GHZ
ETSI EN 300 220 v.1.1.1, SEPTEMBER 2004:	ELECTROMAGNETIC COMPATIBILITY AND RADIO SPECTRUM MATTERS (ERM); SHORT RANGE DEVICES (SRD); RADIO EQUIPMENT TO BE USED IN THE 25 MHZ TO 1000 MHZ FREQUENCY RANGE WITH POWER LEVELS RANGING UP TO 500 MW; PART 3: HARMONIZED EN COVERING ESSENTIAL REQUIREMENTS UNDER ARTICLE 3.2 OF THE R&TTE DIRECTIVE
EN 60950-1, December 2001:	INFORMATION TECHNOLOGY EQUIPMENT – SAFETY – PART 1: GENERAL REQUIREMENTS

Lippo di Calderara, September 8th, 2005

Ruggero Cacioppo
Quality Assurance Laboratory Manager