



Gryphon™ I GBT/GM4500
General Purpose Handheld
Area Imager Bar Code Reader
with Bluetooth® Wireless Technology or
Datalogic's STAR Cordless System™



Quick Reference Guide

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Gryphon™ I GBT/GM4500

About the Scanner

The Gryphon™ product series from Datalogic has been perceived as one of the most innovative readers since the beginning and the new generation of 4500 series wireless readers reinforce this concept thanks to the battery wireless charging system that, coupled with an outstanding design, unchallenged ergonomics and a rich feature set, bring the Datalogic Gryphon GM/GBT4500 series to the TOP of hand held scanners for general purpose applications.

On top of contactless recharging, the high-resolution Mega Pixel sensor for outstanding reading results coupled with Datalogic's distinctive warm-white illumination technology, the high visible red 4-dot and aimer and the Datalogic Motionix™ motion-sensing technology will represent additional key elements for the operators who will find the Gryphon GM/GBT4500 extremely easy to use and intuitive in the Retail, Manufacturing, Transportation & Logistics and Healthcare industries.

Omni-Directional Operating

To read a symbol or capture an image, simply aim the reader and pull the trigger. The Gryphon™ I GBT/GM4500 is a powerful omni-directional reader, so the orientation of the symbol is not important. Datalogic's exclusive patented 'Green Spot' for good-read feedback helps to improve productivity in noisy environments or in situations where silence is required. When positioning the product into the stand, the magnetic coupling will make the scanner automatically detect a bar code inside the field of view, and switch the reading system from trigger mode to autosense mode.

Decoding

The Gryphon™ I GBT/GM4500 reliably decodes all standard 1D (linear) and 2D bar codes, including GS1 DataBar™ linear codes, Postal Codes (China Post), Stacked Codes (such as GS1 DataBar Expanded Stacked, GS1 DataBar Stacked, GS1 DataBar, Stacked Omnidirectional). The data stream - acquired from decoding a symbol - is rapidly sent to the host. The reader is immediately available to read another symbol.

Setting Up the Reader

Follow the steps below to connect and get your reader up and communicating with its host.

1. Configure the Base Station starting on this page.
2. Charge the Batteries (see page 14).
3. Link to the Base Station (see page 18).
4. Select the Interface Type (see page 21).
5. Configure the Reader starting on page 32 (optional, depends on settings needed).

According to recent modification of Regulation for shipping Li-Ion based battery packs, the products and their spare battery packs parts are shipped with a very low residual charge (low state of charge).



NOTE

Hence the needs

*** that a new product must be fully recharged before starting to use it.**

and

*** that battery packs of the stocked products GBT/GM45 and spare battery pack parts must be periodically recharged: for instance by using a WLC4090 cradle powered up with a 12V Datalogic AC/DC adapter (cod.8-0935) for at least 30 minutes each 3 months.**

Positioning the Base Station

The base station/charger may be set up in desk application to hold the reader in three different positions, either a horizontal or standing or vertical position, in order to provide the most comfortable use depending on the needs.

Base Station Positions and related clips to be used

Figure 1- Horizontal Position



This position is preferred, unless a different specific positioning is required, for its outmost ease of insertion as well as the minimum effort and attention required to customer when docking the scanner.

Figure 2- Presentation Position



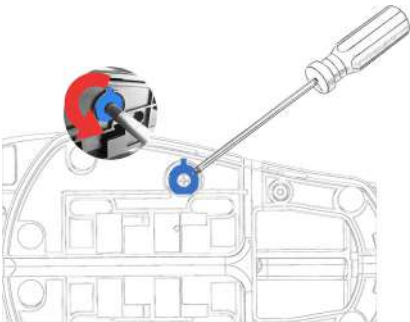
This position is preferred if the scanner is to be used in stand mode and not needed to be often removed from base station.

Figure 3. Vertical Position



This position is preferred when lack of room on the desk-top recommends the scanner to be left vertical during recharging.

1. Insert the appropriate parts for the desired base station position.
2. Release the screw situated on the bottom of the cradle's base (the screw will be kept in position by the blue ring).



3. Using your thumbs, push open the plastic tabs on the bottom of the base to free the wing holders.



4. The stand can now be repositioned in either horizontal or standing position.



To improve the robustness (against accidental falls) of the cradle in Presentation Position, it is suggested to add the Shock Absorber addendum as illustrated below.

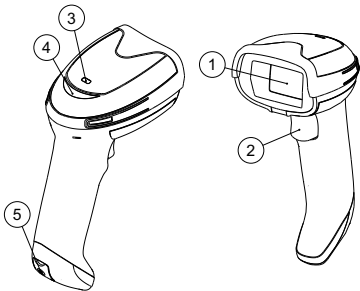
NOTE



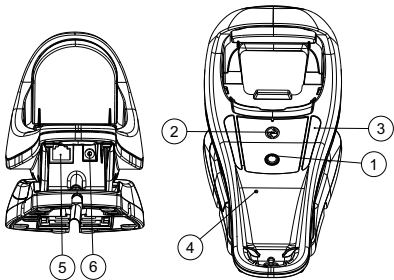
Reader, Cradle and LEDs Description

LEDs on the gun provide information about the battery charging status as well as data transmission.

Figure 4- Gryphon Base LEDs



- | | | | |
|---|------------------------|---|---------------|
| 1 | Scan Window | 4 | Good Read LED |
| 2 | Trigger | 5 | USB Port |
| 3 | Battery & Recharge LED | | |



- | | | | |
|---|----------------|---|--------------------|
| 1 | Service Button | 4 | Cable Release Hole |
| 2 | Power LED | 5 | Communication Port |
| 3 | Recharge LEDs | 6 | Aux Power Port |

Connecting the Base Station

Figure 5 shows how to connect the Base Station to a terminal, PC or other host device. Turn off the host before connection and consult the manual for that equipment (if necessary) before proceeding. Connect the interface cable before applying power to the Base Station.

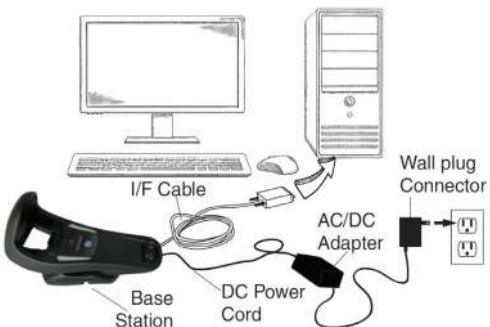


The Gryphon GBT/GM4500 can also be Powered by the Terminal. When powered by the Terminal, the battery charger is automatically set as Slow charge.

For some specific interfaces or hosts or lengths of cable, the use of an external power supply is recommended for full recharging capability (see "Technical Specifications" on page 39 for more details).

Base Station Connection and Routing — Fully insert the Power Cable and Interface (I/F) Cable connectors into their respective ports in the underside of the Base Station. Then connect to an AC Adapter, and plug the AC power cord into the (wall) outlet.

Figure 5. Connecting the Base Station



Securing the DC Power Cord (Optional)

The DC power cord for the adapter can be secured to the bottom of the base in order to maximize the mechanical retention of the cable itself. The routing of the power cord can be changed to accommodate base station positioning: horizontal, stand or wall mount. The cables can be looped around to the front of the Base Station, or fed directly out the back of the Base Station, as shown in [Figure 6](#).

Figure 6. Options for routing the DC cord



Host Connection — Verify before connection that the reader's cable type is compatible with your host equipment.

Most connections plug directly into the host device as shown in [Figure 7](#). Keyboard Wedge interface cables have a 'Y' connection where its female end mates with the male end of the cable from the keyboard and the remaining end at the keyboard port on the terminal/PC.

Figure 7. Connecting to the Host



Power Connection — Plug the AC Adapter into an approved AC wall socket with the cable facing downwards (as shown in [Figure 5](#)) to prevent undue strain on the socket.

Disconnecting the Cable — To detach the cable, insert a paper clip or similar object into the hole on the base, as shown.

Figure 8. Disconnecting the Cable



System and Network Layouts

Stand Alone Layouts

Figure 9- Single Reader Layout

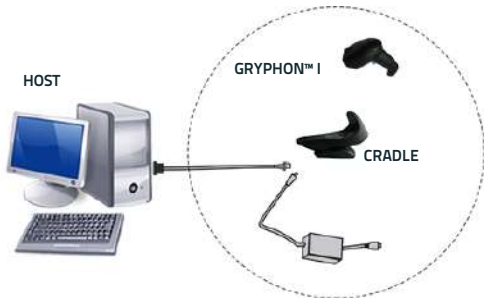
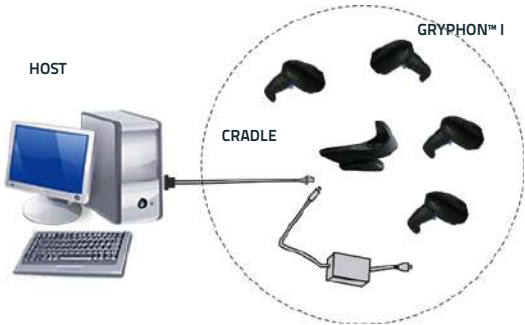
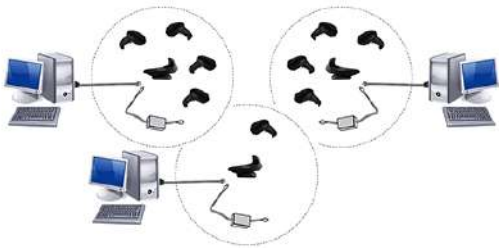


Figure 10- Multiple Reader Layout



In stand alone systems, each cradle is connected to a single Host.

Figure 11- Multiple Stand Alone Layouts



Many stand alone connections can operate in the same physical area without interference, provided all readers and cradles in the system have different addresses.

Using the GBT/GM4500 Scanner

Scanner LEDs

Specific LEDs on the Gryphon Scanner provide information about: good reading result (3GL), battery status and charging status (with micro USB only). The Battery Status information can be easily retrieved by double-tapping with your fingers on top of the head of the scanner. The following table explains the main colors' combinations provided by the Battery Status LED.

Table 1Battery LED

COLOR		STATUS
Blinking color (1s ON - 1s OFF)	Green (charge = 50% - 99%) Red (charge less than 1%) NOTE: Scanner is unus- able until 1% is reached	Charge in Progress through micro USB
Solid Green (charge = 100%)	It goes OFF when Scan- ner's unplugged	Charge Complete through micro USB
Solid color (3s time-out)	Green (charge = 50% - 100%) Amber (charge = 2% - 50%) Red blinking (charge less than 2%)	Battery Status

Using the WLC4090 Radio Base

Radio Base LEDs

LEDs on the Gryphon Base provide information about the Base as well as battery charging status, as shown in Figure 12.

Figure 12- Gryphon Base LEDs



Table 2. Radio Base LEDs

	LED	STATUS
1	Power on / Data	Green On = Base is powered Green Blinking = Base receives data and commands from the Host or the Reader.
2	Charging	Green ON = the battery is completely charged Green fading = battery level 51 to 99% Amber fading = battery level 1 to 50% Red fading = pre-charge

The button can be used to force device connection via the Datalogic Aladdin Software tool and for paging the scanner when it is activated. Refer to the Gryphon I GBT/GM4500 Product Reference Guide (PRG) for a more detailed explanation.

Replacing the Battery Pack



Before proceeding, read “Battery Safety” on the preceding pages. Datalogic recommends annual replacement of rechargeable battery packs to ensure maximum performance.

Use the following procedure to change the reader’s battery:

1. With a narrow metallic object (i.e. a coin) or a screwdriver, unscrew the battery cover screw.



2. Extract the battery pack from its slot.



3. Insert the new battery in the same position.



4. Replace the battery holder cap, plug in the connector and return the contacts circuit to its previous location.



When inserting the new battery into the handle, take care to position the battery and the connector as described above.

5. Insert the cover in the handle and screw it into place.



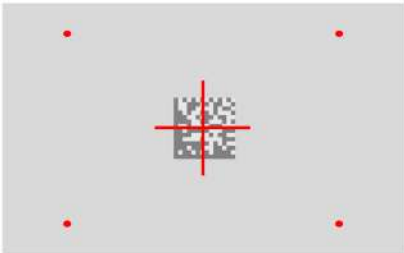
Using the Gryphon™ I GBT/GM4500

The Gryphon™ I GBT/GM4500 normally functions by capturing and decoding codes. The reader is equipped with an internal Motionix™ motion-sensing function which activates the aiming system on device motion. The intelligent aiming system indicates the field of view which should be positioned over the bar code:

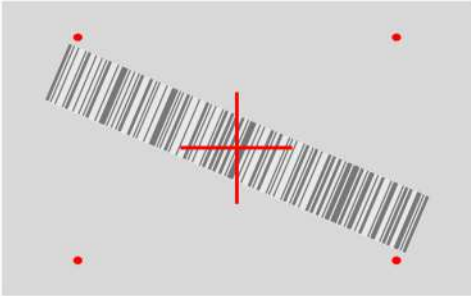
Aiming System



Relative Size and Location of Aiming System Pattern



2D Matrix Symbol



Linear Bar

A red beam illuminates the label. The field of view indicated by the aiming system will be smaller when the reader is closer to the bar code and larger when it is farther from the code. Symbolologies with smaller bars or elements (mil size) should be read closer to the unit. Symbolologies with larger bars or elements (mil size) should be read farther from the unit.

If the aiming system is centered and the entire bar code is within the aiming field, you will get a good read. Successful reading is signaled by an audible tone plus a good-read green spot LED indicator.

Refer to the Gryphon I GBT/GM4500 Product Reference Guide (PRG) for more information about this feature and other programmable settings.

Relative Size and Location of Green Spot



Linking the Reader

Link Datalogic Devices to Base

Before configuring the interface it is necessary to link the handheld with the base.

To link the handheld and the base simply put it into the base. If the reader was previously linked to another base, you must first scan the **Unlink** bar code before re-linking to the new base.



Unlink

Link Scanner as Serial Device to a Bluetooth Host

Use this procedure to let the scanner communicate with a Bluetooth host using the Bluetooth Serial Port Profile (SPP).

1. If using a Bluetooth adapter on the host device, install any driver provided with the adapter.
2. Scan the **Link to Host in SPP mode** label below to make the scanner visible to the host device.
3. Use the Bluetooth manager of the host device to 'Discover new devices' and select "GBT4500...". If you receive an error message, it may be necessary to change the security settings on either the host device or the scanner.
4. Use an RS-232 terminal program to see incoming data on the port designated by the Bluetooth manager of the host device.



Link to Host in SPP mode

Link Scanner as HID device to a Bluetooth host

Use this procedure to send data to a Bluetooth host using the Bluetooth HID profile.

1. If using a Bluetooth adapter on the host device, install any driver provided with the adapter.
2. Scan the **Link to Host in HID mode** label below to make the scanner visible to the host device.
3. Use the Bluetooth manager of the host device to "Discover new devices" and select "GBT4500 ...". If you receive an error message, it may be necessary to change the security settings on either the host device or the scanner.
4. On the host device, open the program that is meant to receive the incoming data.

The data transmitted by the scanner will appear in the program as if it was typed using the keyboard of the host device.



NOTE

The Gryphon I GBT4500 can be set up to authenticate the remote system when connecting, by entering a Bluetooth passkey or a PIN code. If you want to set the security level and authentication options suitable for your application, or when adding new equipment to a system that requires authentication or uses a custom security PIN, please see the PRG for information.

Power Off

Scan the bar code below to shut off power to the hand-held until the next trigger pull.



PowerOff

Selecting the Interface Type

Upon completing the physical connection between the reader and its host, proceed directly to Interface Selection below for information and programming for the interface type supported by the reader and scan the appropriate bar code to select your system's correct interface type, according to your application. For interfaces other than those listed in this manual, see the Gryphon™ I GBT/GM4500 Product Reference Guide (PRG), available online at www.datalogic.com.

Interface Selection

The reader will support all the following host interfaces:

- RS-232 STD
- RS-232 WN
- IBM46XX port 9b (a specific cable's required)
- USB HID POS
- USB Toshiba TEC
- USB (Keyboard, COM, OEM)
- USB Composite (Keyboard + COM)
- Keyboard Wedge

Information and programming options for each interface type are provided in this section. For defaults and additional information associated with each interface, proceed to the corresponding chapter in the Gryphon™ I GBT/GM4500 PRG.

Configuring the Interface

Scan the appropriate programming bar code to select the interface type for your system.



Unlike some other programming features and options, interface selections require that you scan only one programming bar code label. DO NOT scan an ENTER/EXIT bar code prior to scanning an interface selection bar code.

NOTE Some interfaces require the scanner to start in the disabled state when powered up. If additional scanner configuration is desired while in this state, pull the trigger and hold for 5 seconds. The scanner will change to a state that allows programming with bar codes.

RS-232

RS-232 standard interface



Select RS232-STD

RS-232 Wincor-Nixdorf



Select RS232-WN

RS-232 for use with OPOS/UPOS/JavaPOS






Select RS-232 OPOS



USB Com to simulate RS-232 standard interface



Select USB-COM-STD^{*}

^{*} Download the correct USB Com driver from www.datalogic.com

USB-OEM
<p>USB-OEM (can be used for OPOS/UPOS/JavaPOS)</p> <div></div> <p>Select USB-OEM</p>
USB-COMPOSITE
<p>USB-Composite</p> <div></div> <p>Select USB-Composite (Keyboard + COM)</p>
IBM46xx
<p>IBM46xx Port 9b</p> <div></div> <p>Select IBM46xx Port 9b</p>


ADDITIONAL INTERFACES
<p data-bbox="443 343 609 384">USB HID POS</p>  <p data-bbox="401 588 650 629">Select USB HID POS</p>
<p data-bbox="422 670 629 711">USB Toshiba TEC</p>  <p data-bbox="381 915 671 956">Select USB Toshiba TEC</p>

Keyboard Interface

Use the programming bar codes to select options for USB Keyboard and Wedge Interfaces.


KEYBOARD

AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95 w/
Standard Key Encoding




Select KBD-AT

Keyboard Wedge for IBM AT PS2 with standard key encoding
but without external keyboard



Select KBD-AT-NK

AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95
w/Alternate Key



Select KBD-AT-ALT

KEYBOARD (continued)

Keyboard Wedge for IBM AT PS2 with alternate key encoding
but without external keyboard



Select KBD-AT-ALT-NK

USB Keyboard with standard key encoding



◆ Select USB Keyboard

USB Keyboard with alternate key encoding



Select USB Alternate Keyboard

◆ = default value

Scancode Tables



Refer to Gryphon I GBT/GM4500 PRG for information about control character emulation for keyboard interfaces.

Country Mode

This feature specifies the country/language supported by the keyboard. Only these interfaces support ALL Country Modes:

- USB Keyboard with alternate key encoding
- USB Keyboard with standard key encoding
- AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95 w/ Std Key Encoding
- Keyboard Wedge for IBM AT PS2 with standard key encoding but without external keyboard
- AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95 without Alternate Key
- Keyboard Wedge for IBM AT PS2 without alternate key encoding but without external keyboard

All other interfaces support ONLY the following Country Modes: U.S., Belgium, Britain, France, Germany, Italy, Spain, Sweden..

COUNTRY MODE
<div></div> <div>ENTER/EXIT PROGRAMMING MODE</div>
<div></div> <div>◆ Country Mode = U.S.</div>

◆ = default value

COUNTRY MODE (continued)



Country Mode = Belgium



Country Mode = Croatia*



Country Mode = Czech Republic*



Country Mode = Denmark*



Country Mode = France

- * Supports only the interfaces listed in the Country Mode feature description.

COUNTRY MODE (continued)



Country Mode = French Canadian*



Country Mode = Germany



Country Mode = Hungary*



Country Mode = Italy



Country Mode = Japanese 106-key*

* Supports only the interfaces listed in the Country Mode feature description.

COUNTRY MODE (continued)



Country Mode = Lithuanian*



Country Mode = Norway*



Country Mode = Poland*



Country Mode = Portugal*

- * Supports only the interfaces listed in the Country Mode feature description.

COUNTRY MODE (continued)
 Country Mode = Romania*
 Country Mode = Spain
 Country Mode = Sweden
 Country Mode = Slovakia*
 Country Mode = Switzerland*

* Supports only the interfaces listed in the Country Mode feature description.

Programming

The reader is factory-configured with a set of standard default features. After scanning the interface bar code from the Interfaces section, select other options and customize your reader through use of the programming bar codes available in the Gryphon™ I GBT/GM45 PRG. Check the corresponding features section for your interface, and also the Data Editing and Symbolologies chapters of the PRG.

Using Programming Bar Codes

This manual contains bar codes which allow you to reconfigure your reader. Some programming bar code labels, like the "Reset Default Settings" on page 18, require only the scan of that single label to enact the change.

Other bar codes require the reader to be placed in Programming Mode prior to scanning them. Scan an ENTER/EXIT bar code once to enter Programming Mode; scan the desired parameter settings; scan the ENTER/EXIT bar code again to accept your changes, which exits Programming Mode and returns the reader to normal operation.

Configure Other Settings

Additional programming bar codes are available in the PRG to allow for customizing programming features. If your installation requires different programming than the standard factory default settings, refer to the PRG.

Resetting Product Defaults

If you aren't sure what programming options are in your reader, or you've changed some options and want your custom factory settings restored, scan the bar code below to reset the reader to its initial configuration. Reference the PRG for other options, and a listing of standard factory settings.



NOTE




Factory defaults are based on the interface type. Be sure your reader is configured for the correct interface before scanning this label. See "Selecting the Interface Type" on page 7 for more information.



Reset Default Settings

Numlock

This option specifies the setting of the Numbers Lock (Numlock) key while in keyboard wedge interface. This only applies to alternate key encoding interfaces. It does not apply to USB keyboard.

NUMLOCK
<div></div> <div>ENTER/EXIT PROGRAMMING MODE</div>
<div></div> <div>◆ Numlock = Numlock key unchanged</div> <div></div> <div>Numlock = Numlock key toggled</div>

◆ = default value

Caps Lock State

This option specifies the format in which the reader sends character data. This applies to keyboard wedge interfaces. This does not apply when an alternate key encoding keyboard is selected.

CAPS LOCK STATE



ENTER/EXIT PROGRAMMING MODE



♦ Caps Lock State = Caps Lock OFF



Caps Lock State = Caps Lock ON



Caps Lock State = AUTO Caps Lock Enable

♦ = default value

Reading Parameters

Move the reader toward the target and center the aiming pattern and illumination system to capture and decode the image. See "Using the Gryphon™ I GBT/GM4500" on page 16 for more information.

The aiming system will briefly switch off after the acquisition time, and if no code is decoded will switch on again before the next acquisition. The illuminator will remain on until the symbol is decoded.

As you read code symbols, adjust the distance at which you are holding the reader.

Aiming System

A number of options for customizing control of the Aiming System are available. See the Gryphon™ I GBT/GM4500 PRG for more information and programming bar codes.

Good Read Green Spot Duration

Successful reading can be signaled by a good read green spot. Use the bar codes that follow to specify the duration of the good read pointer beam after a good read.

GOOD READ GREEN SPOT DURATION	
<div></div> <div>ENTER/EXIT PROGRAMMING MODE</div>	
<div></div> <div>Disabled</div>	<div></div> <div>◆ Short (300 ms)</div>
<div></div> <div>Medium (500 ms)</div>	<div></div> <div>Long (800 ms)</div>

◆ = default value

Operating Modes

Scan Mode

The imager can be set to operate in one of several scanning modes. See the PRG for more information and settings for any of the options:

Trigger Single (Default) This mode is associated with typical handheld reader operation. When the trigger is pulled, illumination is turned on and the scanner attempts to read a label. Scanning is activated until one of the following occurs:

- the programmable 'maximum scan on time'¹ has elapsed
- a label has been read
- the trigger is released

Trigger Pulse Multiple Scanning begins when the trigger is pulled and continues after the trigger is released, until the trigger is pulled again or until the programmable 'maximum scan on time'¹ has elapsed. Reading a label does not disable scanning. Double Read Timeout¹ prevents undesired multiple reads while in this mode.

Trigger Hold Multiple When the trigger is pulled, scanning starts and the product scans until the trigger is released or 'maximum scan on time'¹ has elapsed. Reading a label does not disable scanning. Double Read Timeout¹ prevents undesired multiple reads while in this mode.


Always On The illuminator is always ON and the reader is always ready for code reading. Double Read Timeout¹ prevents undesired multiple reads.

Flashing The reader illuminator flashes on and off regardless of the trigger status. Code reading takes place only during the Flash On² time. Double Read Timeout¹ prevents undesired multiple reads.


Object Detection The scanner looks for changes within its field-of-view. The Aiming Pattern is always on to show the optimum reading area. If a predefined amount of movement is detected, the white illumination switches on. Scanning continues until a label is read or "maximum scan on time" is reached.

1. See the Product Reference Guide (PRG) for these and other programmable features
2. Controlled by Flash On Time and Flash Off Time. Use the PRG to program these options.


SCAN MODE




ENTER/EXIT PROGRAMMING MODE




♦ Scan Mode = Trigger Single




Scan Mode = Trigger Pulse Multiple




Scan Mode = Trigger Hold Multiple



Scan Mode = Flashing



Scan Mode = Always On



Scan Mode = Stand Mode

♦ = default value




Pick Mode

Specifies the ability of the reader to decode labels only when they are close to the center of the aiming pattern, which is the area indicated by the red cross. Pick Mode is a Decoding and Transmission process where bar codes that are not within the configurable distance from the center of the aiming pattern are not acknowledged or transmitted to the host. It is active only while the scanner is in Trigger Single mode. If the scanner switches to a different Read Mode, Pick Mode is automatically disabled.



NOTE

This feature is not compatible with Multiple Labels Reading in a Volume. See the PRG for more information.

PICK MODE
<div></div> <div>ENTER/EXIT PROGRAMMING MODE</div>
<div></div> <div>◆ Pick Mode = Disable</div>
<div></div> <div>Pick Mode = Enable</div>

◆ = default value

Multiple Label Reading

The reader offers a number of options for multiple label reading. See the PRG or software configuration tool for descriptions of these features and programming labels.

Technical Features

Gryphon™ I GBT-GM4500

Electrical Features	
Power Supply	5V to 14V +/-5% in the Communication Port 5V to 14V +/-5% in the Aux Power Port NOTE: Aux Power Port is recommended when long cables are connected to Communication Port
Consumption (Typical)	Gun Only: 330 mA @ 3.7V(Operative) Cradle Only: 80 mA @ 5V (Operative) Cradle with Gun in Charge (Scan while Charging): 475 mA (PC host USB) 1150 mA (5V on Aux Power Port) 520 mA (12V on Aux Power Port) Gun Charging via micro USB: 480 mA (PC host port, no Scan) 900 mA (wall adapter, no Scan) 1160 mA (wall adapter, Scan while Charging)
Battery Capacity	Li-Ion 3.6V, 3250 mAh (11.7W/h)
Recharge Time (Typical)	Values valid for a fully depleted battery USB Only: 11h (no Scan) 15h (Scan while Charging) Using Aux Power Port: 3h (no Scan) 3.5h (Scan while Charging) Using micro USB (wall adapter): 2h (no Scan, with Wall Adapter) 4.6h (no Scan, with PC Host)
Max. Scan Rate	50 frames/sec
Reading Indicators	Top and rear illumination, Good Read Spot, Beep, Vibrator

Optical Features	
Optical Format	1/4"
Active Imager Size	3896 um (H) x 2453 um (V)
Active Pixels	1280 H x 800 V
Illumination System	LED source Warm White Emission (wavelength = 350 - 770 nm) Hyper Red Emission (wavelength = 660 nm, DGM model only) IEC 62471 Exempt Risk Group
Aiming System	RED laser source IEC 60825-1 Class 2 Radiation 1 mW Avg., Emitted wavelength 650 nm, 10ms pulse
Ambient Light	Up to 100,000 lux
Tilt Tolerance	0° - 360°
Pitch Tolerance	± 65°
Skew Tolerance	± 65
Field of View	36° H x 23° V
PCS (Datalogic Test Chart)	minimum 15%

DOF - Depth of Field (Typical) ^a		
Symbology	SR	HD
Code 39	5 mil: 7.0 - 38.0 cm (2.7" - 14.9") 10 mil: 2.2 - 58.0 cm (0.8" - 22.8") 20 mil: FOV lim. - 110 cm (up to 43.3")	3 mil: 5.0 - 15.0 cm (2.0" - 5.9") 5 mil: 0.5 - 25.0 cm (0.2" - 9.8") 10 mil: 0.5 - 45.0 cm (0.2" - 17.7")
EAN13	7.5 mil: 9.0 - 30.0 cm (3.5" - 11.8") 13 mil: 1.0 - 71.0 cm (0.4" - 27.9")	7.5 mil: 2.0 - 23.5 cm (0.8" - 9.2") 13 mil: 1.0 - 40.0 cm (0.4" - 15.7")
PDF417	6.6 mil: 6.5 - 24.0 cm (2.6" - 9.4") 10 mil: 2.5 - 41.0 cm (1.0" - 16.1") 15 mil: 2.3 - 65.0 cm (0.9" - 25.6")	4 mil: 3.0 - 12.0 cm (1.2" - 4.7") 6.6 mil: 0.5 - 23.5 cm (0.2" - 9.2") 10 mil: 0.5 - 31.0 cm (0.2" - 12.2")
Datamatrix	10 mil: 5.5 - 27.0 cm (2.2" - 10.6") 15 mil: 2.8 - 41.0 cm (1.1" - 16.1")	5 mil: 5.5 - 9.0 cm (2.2" - 3.5") 10 mil: 0.2 - 27.0 cm (0.1" - 10.6")
Max Resolution	1D Min = 4 mils PDF417 Min = 5 mils Datamatrix Min = 7.5 mils	1D Min = 3 mils PDF417 Min = 3 mils Datamatrix Min = 4 mils

- a. 13 mils DOF based on EAN. All other 1D codes are Code 39. All labels grade A, typical environmental light, 20°C, label inclination 10°

Environmental Features	
Operating Temperature	0 °C to + 50 °C (+32° F to +122 °F)
Storage Temperature	-40 °C to + 70 °C (-40 ° F to +158 °F)
Humidity	95% non condensing
Drop Resistance	IEC 68-2-32 Tested 1.8 m (6 ft)
ESD Protection	16 KV
Protection Class	IP52
Weight (without cable)	Approx. 235 g (8.29 oz.) GBT4500 or GM4500 and battery pack included Battery Pack is approx. 65 g (2.29 oz.)
Cable Length	Refer to www.datalogic.com

Environmental Features

Physical Dimensions	<p>Gun only (lhp): 68.4 x 165.8 x 110.0mm (2.7" x 6.5" x 4.3")</p> <p>Cradle only (lhp): 94.6 x 128.7 x 212.7mm (3.7" x 5.1" x 8.4")</p> <p>Gun on Cradle Horizontal mount (lhp): 94.6 x 134.0 x 212.7mm (3.7" x 5.3" x 8.4")</p> <p>Gun on Cradle Presentation mount (lhp): 94.6 x 170.7 x 183.6mm (3.7" x 6.7" x 7.2")</p>
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Decode Capability

1D Bar Codes

UPC/EAN/JAN (A, E, 13, 8); UPC/EAN/JAN (including P2 /P5); UPC/EAN/JAN (including; ISBN / Bookland & ISSN); UPC/EAN Coupons; Code 39 (including full ASCII); Code 39 Trioptic; Code39 CIP (French Pharmaceutical); LOGMARS (Code 39 w/ standard check digit enabled); Danish PPT; Code 32 (Italian Pharmacode 39); Code 128; Code 128 ISBT; Interleaved 2 of 5; Standard 2 of 5; Interleaved 2 of 5 CIP (HR); Industrial 2 of 5; Discrete 2 of 5; Matrix 2 of 5; IATA 2of5 Air cargo code; Code 11; Codabar; Codabar (NW7); ABC Codabar; EAN 128; Code 93 ; MSI; PZN; Plessey; Anker Plessey; GS1 DataBar Omnidirectional; GS1 DataBar Limited; GS1 DataBar Expanded; GS1 DataBar Truncated; DATABAR Expanded Coupon.

2D / Stacked Codes

The Gryphon I GBT/GM4500 scanner is capable of decoding the following symbologies using multiple frames (i.e. Multi-Frame Decoding):

Datamatrix; Inverse Datamatrix; Datamatrix is configurable for the following parameters;; Normal or Inverted; Square or Rectangular Style; Data length (1 - 3600 characters); Maxicode; QR Codes (QR, Micro QR and Multiple QR Codes); Aztec; Postal Codes - (Australian Post; Japanese Post; KIX Post; Planet Code; Postnet; Royal Mail Code (RM45CC); Intelligent Mail Barcode (IMB); Sweden Post; Portugal Post); LaPoste A/R 39; PDF-417; MacroPDF; Micro PDF417; GS1 Composites (1 - 12); French CIP13^a; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional; GS1 DataBar Expanded Stacked; GS1 Databar Composites; Chinese Sensible Code; Inverted 2D codes^b.

^aIt is acceptable to handle this with ULE

^bThe SW can apply the Normal/Reverse Decoding Control to the following symbologies: Datamatrix, QR, Micro QR, Aztec and Chinese Sensible Code.

Regulatory			
See Regulatory Addendum			
Radio Features			
Wireless Technology	Star™ 910 MHz	Star™ 433 MHz	Bluetooth
Range (in open air)	50 m	50 m	100 m
Max number of devices per base station	16		7

LED and Beeper Indications

The imager's beeper sounds and its illumination flashes or changes color to indicate various functions or errors on the reader. A 'Green Spot' also lights to indicate a good read. The tables below list these indications. Reference the PRG for a more detailed list.

Indication	LED	Beeper
Power-up	Upper LED flashes/blinks on power-up, however, this may be too rapid to view. With a USB interface, the LED blinks until enumeration with the host is completed.	Imager beeps four times at highest frequency and volume upon power-up.
Good Read	Upper green LED comes on for programmed time (default). LED behavior for this indication is configurable using Aladdin utility.	One beep at current frequency, volume, mono/bi-tonal setting upon a successful label scan. It is also possible to upload custom jingles with Aladdin.
ROM Failure	200ms on / 200ms off	Imager sounds one error beep at highest volume for 200 mS.
Limited Scanning Label Read	N/A	Imager 'chirps' six times at the highest frequency and current volume.
Imager Disabled	The LED blinks continuously 100mS on / 900 mS off	N/A

Troubleshooting

Problem	Possible Cause	Possible Solutions
Nothing happens when the scan button is pulled.	No power to the imager.	Check system power. Ensure power supply is connected.
	Interface or power cables are loose.	Ensure all cable connections are secure.
LED comes on, but bar code does not decode.	Imager not programmed for correct bar code type.	Ensure imager is programmed to read the type of bar code scanned. Refer to the PRG for more information.
	Bar code label is unreadable.	Check the label to ensure it is not defaced. Try scanning another bar code type.
	Distance between imager and bar code is incorrect.	Move imager closer to or further from the bar code.
Bar code is decoded but not transmitted to the host.	Imager not programmed for the correct host type.	Scan the appropriate host type bar code. Refer to the PRG for more information.



For detailed troubleshooting, refer to the PRG (Product Reference Guide)

NOTE

Ergonomic Recommendations



CAUTION

In order to avoid or minimize the potential risk of ergonomic injury follow the recommendations below. Consult with your local Health & Safety Manager to ensure that you are adhering to your company's safety programs to prevent employee injury.

- 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.

Cleaning Procedure

Proper cleaning is needed on the external plastic surfaces, output window and electrical contacts to guarantee reliable scanning and charging of the battery.

A regular cleaning routine will remove the dust and dirt that may accumulate on the product over time. The maintenance activity may be repeated more frequently depending on the severity of the environment in which the scanner is used.

A periodic deeper cleaning is suggested once per month.

Cleaning plastic surfaces

Exterior surfaces and scan windows exposed to spills, smudges or debris accumulation require periodic cleaning to ensure best performance during scanning operations. Follow the procedures described in this instruction sheet to keep your Gryphon device in good operating condition.



CAUTION

DO NOT use abrasive pads or cleaning agents.



CAUTION

Be sure to turn off power and unplug the device from electrical outlet before cleaning.

Common Cleaning Solutions

The cleaners and disinfectants listed below are tested for use on Datalogic's Disinfectant-Ready Enclosures:

Cleaners	Disinfectants
Formula 409® Glass and surface cleaner	CaviWipes™
Isopropyl alcohol	Clorox® bleach
Dish soap and water	Hepacide Quat® II
Windex® Original (Blue)	Sani-Cloth® Virex® II 256



Disinfectants may be harsh on metal. They are recommended for use only on enclosures.



**DO NOT spray or pour cleaner directly onto the unit.
DO NOT use solutions in their concentrated form.
DO NOT use aerosols, solvents or abrasives.
DO NOT use paper towels or rough cloths to clean windows.**

Cleaning enclosure and window surfaces

1. Moisten a soft cloth with a recommended cleaning solution. Be sure to apply the solution to your cloth first. Wring excessive liquid from the cloth.
2. Use the cloth to wipe down the surface of the unit. Use cotton swabs, lightly moistened, to reach in corners and crevices.
3. Use another clean dry cloth to remove any residue of the cleaning agent and ensure the unit is dry.



Support Through the Website

Datalogic provides several services as well as technical support through its website.

Log on to www.datalogic.com and click on the SUPPORT link which gives you access to:

Downloads by selecting your product model from the drop-down list in the Search by Product field for specific Data Sheets, Manuals, Software & Utilities, and Drawings;

Repair Program for On-Line Return Material Authorizations (RMAs) plus Repair Center contact information;

Customer Service containing details about Maintenance Agreements;

Technical Support through email or phone.

Charging the Batteries

To charge the battery, simply insert the Gryphon into the base. When the scanner is fully seated in the cradle, it will sound a 'chirp' to indicate that the cradle has detected the scanner connection.

The LEDs on the base (shown in Table 1) will indicate the status of the battery.



The Gryphon GBT/GM4500 may get warm during charging: this is normal and does not mean a malfunction.



Before using the Battery, read "Battery Safety" in the following section. Datalogic recommends annual replacement of rechargeable battery packs to ensure maximum performance.

Battery Safety

To install, charge and/or perform any other action on the battery, follow the instructions in this manual.



WARNING

Do not discharge the battery using any device except for the scanner. When the battery is used in devices other than the designated product, it may damage the battery or reduce its life expectancy. If the device causes an abnormal current to flow, it may cause the battery to become hot, explode or ignite and cause serious injury.

Lithium-ion battery packs may get hot, explode or ignite and cause serious injury if exposed to abusive conditions. Be sure to follow the safety warnings listed on the following page.



WARNING

- Do not place the battery pack in fire or heat.
- Do not connect the positive terminal and negative terminal of the battery pack to each other with any metal object (such as wire).
- Do not carry or store the battery pack together with metal objects.
- Do not pierce the battery pack with nails, strike it with a hammer, step on it or otherwise subject it to strong impacts or shocks.
- Do not solder directly onto the battery pack.
- Do not expose the battery pack to liquids, or allow the battery to get wet.
- Do not apply voltages to the battery pack contacts.



WARNING

In the event the battery pack leaks and the fluid gets into your eye, do not rub the eye. Rinse well with water and immediately seek medical care. If left untreated, the battery fluid could cause damage to the eye.



CAUTION

Always charge the battery at 32° – 104°F (0° - 40°C) temperature range.

Use only the authorized power supplies, battery pack, chargers, and docks supplied by your Datalogic reseller. The use of any other power supplies can damage the device and void your warranty.

Do not disassemble or modify the battery. The battery contains safety and protection devices, which, if damaged, may cause the battery to generate heat, explode or ignite.

**CAUTION**

Do not place the battery in or near fire, on stoves or other high temperature locations. Do not place the battery in direct sunlight, or use or store the battery inside cars in hot weather. Doing so may cause the battery to generate heat, explode or ignite. Using the battery in this manner may also result in a loss of performance and a shortened life expectancy.

**CAUTION**

Do not place the battery in microwave ovens, high-pressure containers or on induction cookware.

Immediately discontinue use of the battery if, while using, charging or storing the battery, the battery emits an unusual smell, feels hot, changes color or shape, or appears abnormal in any other way.

Do not replace the battery pack when the device is turned on.

Do not remove or damage the battery pack's label.

Do not use the battery pack if it is damaged in any part.

Battery pack usage by children should be supervised.

As with other battery types, Lithium-Ion (LI) batteries will lose capacity over time. Capacity deterioration is noticeable after one year of service whether the battery is in use or not. It is difficult to precisely predict the finite life of a LI battery, but cell manufacturers rate them at 500 charge cycles. In other words, the batteries should be expected to take 500 full discharge/charge cycles before needing replacement. This number is higher if partial discharging/recharging is adhered to rather than full/deep discharging.



CAUTION

Storage of batteries for long time at fully charged status or at fully discharged status should be avoided.



CAUTION

Only in case of long storage, to avoid deep discharge of the battery it is recommended to partially recharge the battery every three months to keep the charge status at a medium level.

As a reference, run a fast recharge for 20 minutes every three months on unused products to avoid any performance deterioration of the cell.

The useful life of LI batteries depends on usage and number of charges, etc., after which they should be removed from service, especially in mission critical applications. Do not continue to use a battery showing excessive loss of capacity, it should be properly recycled / disposed of and replaced.

Collect and recycle waste batteries separately from the device to comply with European Directive 2006/66/EC, 2011/65/EU, 2002/96/EC and 2012/19/EU and subsequent modifications, US and China regulatory and other laws and regulations about the environment.

Datalogic Limited Factory Warranty

Warranty Coverage

Datalogic warrants to Customer that Datalogic's products will be free from defects in materials and workmanship for a period of three (3) years from product shipment. Datalogic hardware products are warranted against defects in material and workmanship under normal and proper use. The liability of Datalogic under this warranty is limited to furnishing the labor and parts necessary to remedy any defect covered by this warranty and restore the product to its normal operating condition. Repair or replacement of product during the warranty does not extend the original warranty term. Products are sold on the basis of specifications applicable at the time of manufacture and Datalogic has no obligation to modify or update products once sold.

If Datalogic determines that a product has defects in material or workmanship, Datalogic shall, at its sole option repair or replace the product without additional charge for parts and labor, or credit or refund the defective products duly returned to Datalogic. To perform repairs, Datalogic may use new or reconditioned parts, components, subassemblies or products that have been tested as meeting applicable specifications for equivalent new material and products. Customer will allow Datalogic to scrap all parts removed from the repaired product. The warranty period shall extend from the date of shipment from Datalogic for the duration published by Datalogic for the product at the time of purchase (Warranty period). Datalogic warrants repaired hardware devices against defects in workmanship and materials on the repaired assembly for a 90 day period starting from the date of shipment of the repaired product from Datalogic or until the expiration of the original warranty period, whichever is longer. Datalogic does not guarantee, and it is not responsible for, the maintenance of, damage to, or loss of configurations, data, and applications on the repaired units and at its sole discretion can return the units in the 'factory default' configuration or with any software or firmware update available at the time of the repair (other than the firmware or software installed during the manufacture of the product). Customer accepts responsibility to maintain a back up copy of its software and data.

Warranty Claims Process

In order to obtain service under the Factory Warranty, Customer must notify Datalogic of the claimed defect before the expiration of the applicable Warranty period and obtain from Datalogic a return authorization number (RMA) for return of the product to a designated Datalogic service center. If Datalogic determines Customer's claim is valid, Datalogic will repair or replace product without additional charge for parts and labor. Customer shall be responsible for packaging and shipping the product to the designated Datalogic service center, with shipping charges prepaid. Datalogic shall pay for the return of the product to Customer if the shipment is to a location within the country in which the Datalogic service center is located. Customer shall be responsible for paying all shipping charges, duties, taxes, and any other charges for products returned to any other locations. Failure to follow the applicable RMA policy, may result in a processing fee. Customer shall be responsible for return shipment expenses for products which Datalogic, at its sole discretion, determines are not defective or eligible for warranty repair.

Warranty Exclusions

The Datalogic Factory Warranty shall not apply to:

- (i) any product which has been damaged, modified, altered, repaired or upgraded by other than Datalogic service personnel or its authorized representatives;
- (ii) any claimed defect, failure or damage which Datalogic determines was caused by faulty operations, improper use, abuse, misuse, wear and tear, negligence, improper storage or use of parts or accessories not approved or supplied by Datalogic;
- (iii) any claimed defect or damage caused by the use of product with any other instrument, equipment or apparatus;
- (iv) any claimed defect or damage caused by the failure to provide proper maintenance, including but not limited to cleaning the upper window in accordance with product manual;
- (v) any defect or damage caused by natural or man-made disaster such as but not limited to fire, water damage, floods, other natural disasters, vandalism or abusive events that would cause internal and external component damage or destruction of the whole unit, consumable items;
- (vi) any damage or malfunctioning caused by non-restoring action as for example firmware or software upgrades, software or hardware reconfigurations etc.;
- (vii) the replacement of upper window/cartridge due to scratching, stains or other degradation and/or
- (viii) any consumable or equivalent (e.g., cables, power supply, batteries, keypads, touch screen, triggers etc.).

No Assignment

Customer may not assign or otherwise transfer its rights or obligations under this warranty except to a purchaser or transferee of product. No attempted assignment or transfer in violation of this provision shall be valid or binding upon Datalogic.

DATALOGIC'S LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ORAL OR WRITTEN, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NONINFRINGEMENT. DATALOGIC SHALL NOT BE LIABLE FOR ANY DAMAGES SUSTAINED BY CUSTOMER ARISING FROM DELAYS IN THE REPLACEMENT OR REPAIR OF PRODUCTS UNDER THE ABOVE. THE REMEDY SET FORTH IN THIS WARRANTY STATEMENT IS THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDY FOR WARRANTY CLAIMS. UNDER NO CIRCUMSTANCES WILL DATALOGIC BE LIABLE TO CUSTOMER OR ANY THIRD PARTY FOR ANY LOST PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL IN-DIRECT, SPECIAL OR CONTINGENT DAMAGES REGARDLESS OF WHETHER DATALOGIC HAD ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.

Risk of Loss

Customer shall bear risk of loss or damage for product in transit to Datalogic. Datalogic shall assume risk of loss or damage for product in Datalogic's possession. In the absence of specific written instructions for the return of product to Customer, Datalogic will select the carrier, but Datalogic shall not thereby assume any liability in connection with the return shipment.

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www.datalogic.com

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Rev. A

November 2018