Quick Start Guide

Quadrus EZ Reader

This guide is designed to get your reader up and running quickly. When connected to a host computer with Windows operating system (98 or above), you can use **ESP** (Easy Setup Program) to configure and control your **Quadrus EZ Reader**. In addition to **ESP**, you can send commands to your reader by serial command and by the reader's embedded menus.

For a full explanation of the **Quadrus EZ**'s commands and features, refer to the **Help** section of **ESP** or contact your Microscan sales representative for the **Quadrus EZ Reader User's Manual**, available in digital and print formats.

MICROSCAN.

Step 1 — Check Required Hardware

If connecting for use with the EZ Button only, you will need:

- (**1**) A **Quadrus EZ Reader**, FIS-6700-XXXX
- (**2**) An **IB-150 Kit**, 98-000040-02, which includes the cable, 61-000034-02, and IB-150 **Interface Box**, 99-000008-02
- (**3**) A **Power Supply**, 97-100004-15 (90-264 VAC, 24VDC).[1]

If connecting to a host, you will also need:

- (**4**) A **Host Computer** with either a terminal communications program or Microscan's **ESP**, which runs under Windows operating system (98 or above)
- (**5**) An **IB-150 Host Communications Cable**, 61-000034-02 (25 pin socket to 9-pin socket)
- (**6**) **Object Detector** (optional), 99-000017-01

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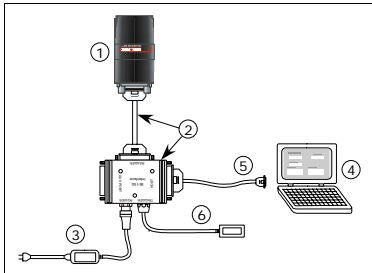
1. If using your own power supply, be certain that it is wired correctly and supplies voltage within the +10 to 28 VDC limits. Incorrect wiring or voltage can cause software or equipment failures.

Step 2 — Connect the System

Caution: Be certain all cables are connected **BEFORE** applying power. Always power down **BEFORE** disconnecting cables.

Connecting for EZ Button Setup without a Host

1. Connect the reader to the IB-150 kit, 98-000040-02.
2. Connect power supply and cycle power to the reader.

Connecting to a Host

1. Connect the reader to the IB-150 kit, 98-000040-02.
2. Connect IB-150 host cable, 61-000034-02, to the host and the host connector on the side of the IB-150.[1]
3. Connect power supply and apply power to the reader.
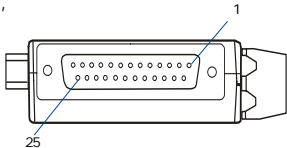
Side View of IB-150 showing Host 25-pin Socket Connection

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1. If setting up your own reader-to-interface cable, make certain that you connect transmit pins to receive pins.

Step 3 — Position Symbol and Reader

1. Position the reader at the focal distance recommended on the back of the unit, for example, **FD = 4"**.
2. Position the reader in a place devoid of sunlight and other ambient light.
3. Tip the reader relative to the symbol to avoid the glare of direct, non-diffused (specular) reflection. The diagonal case parting line should be perpendicular to the plane of the symbol by either pitching the symbol or the reader (refer to the illustration at right).
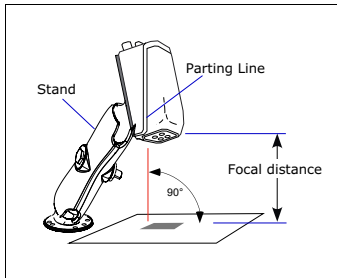
Other Considerations

- Symbols can be rotated (tilted) at any angle; however, for best results symbols should be aligned with the FOV (field of view).
- Avoid excessive skew or pitch. Maximum skew is **±30°**; and maximum pitch is **±30°**.

Note: For instant setup and validation, the Quadrus EZ can be hand-held or set on its side, but for accuracy, a mounting stand such as Microscan's mounting stand shown above, 98-000020-01, is recommended.

Step 4 — Install ESP

(**ESP** stands for *Easy Setup Program*.)

With your reader connected to a host computer with Windows operating system (98 or above), you can use **ESP** for configuration and control.

If downloading from your "Microscan Tools" CD:

1. Insert your "Microscan Tools" CD in your computer's CD drive.
2. Choose **ESP Software** from the main menu.
3. Launch **Setup.exe** under **ESP** and follow the prompts.

If downloading from the web:

1. Go to *http://www.microscan.com/downloadcenter/*
2. Create a new "myMicroscan" member account or, if you are already a member, enter your user name and password.
3. Click the **Download Software** link and extract the latest version of **ESP** to a directory of your choice. *Note where your **ESP.exe** file is stored on your hard drive.*
4. At the end of the install process, the following icon should appear on your desktop:
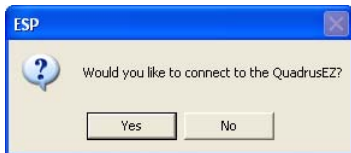

5. Click the **ESP** icon to start the program.

Step 5 — Select Reader Model in ESP

When you start the program, the following menu will appear:

1. Click on the **Quadrus EZ** icon.
2. Select the default name, (**Quadrus EZ-1**, for example) or type in a file name of your choice.
3. If you do not want to make this selection every time you load **ESP**, uncheck "Show this window at Startup".

Model

Select a Model:

Quadrus EZ	MS-3 Laser	MS-3 CCD	MS-9	MS-710
MS-820	MS-850	MS-860	MS-880	MS-Q

Description: QuadrusEZ-1

☑ Show this window at Startup
☐ Skip Easy Setup Mode

OK   Cancel

4. Click **OK.**
5. Click **Yes** when the following dialog box appears:

ESP

❓ Would you like to connect to the QuadrusEZ?

Yes   No

Note: If you need to select another model later, you can find it in **App Mode** under **Model** on the menu bar.

Step 6 — Select Communications Protocol

When the following dialog appears, make your selection and click **Next**.

For RS-232:

1. In the RS-232 dialog, if your communications port is not the default **COM1**, use the pull down arrow to change your communications port.
2. Click **Finish**.
3. If the connection fails, click the **Autoconnect** button, select a different Com port, and try again.

Autoconnect

Note: If your host settings cannot be changed to match the reader's settings, check the **Force Connect** box.

For TCP/IP or USB:

See **ESP Help** or the **Quadrus EZ Reader User's Manual**.
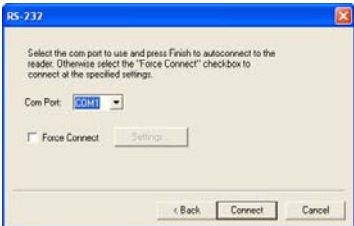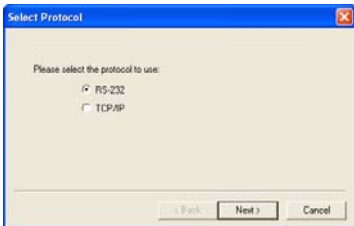
Step 7 — Locate the Symbol in the FOV
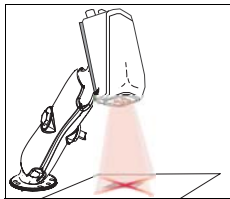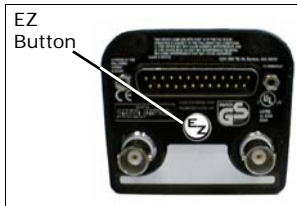
Locate by EZ Button

When not connected to a computer, the **EZ Button** will allow you to quickly locate a symbol in the reader's FOV.

1. Press and hold down the **EZ Button** until you hear **one short beep** and then release. You will see the red X-pattern.

2. Center the X-pattern on the symbol. Move the symbol or the reader so that the X-pattern is centered over the symbol.

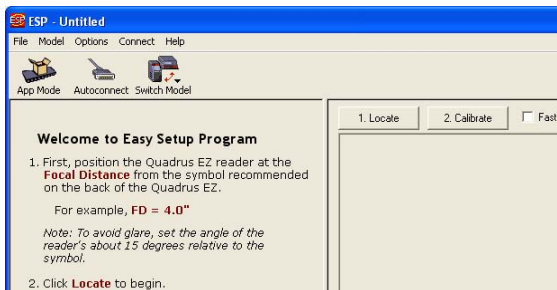   It is important that the entire symbol falls within the reader's field of view (FOV).

Note: To end all **EZ Button** functions, press the **EZ Button** once and then quickly release.

Note: If attached to a monitor, holding the **EZ Button** until you hear **4 beeps** enables **Live Video Output**.
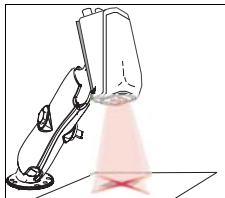
Locate By ESP

1. In **ESP**'s **EZ Mode**, click the **Locate** button to enable the "X" finder pattern.

2. You will see the X-pattern projected from the front of the reader.
3. Center the X-pattern over the symbol you want to read.
4. Click the **Stop** button to end the locate function.

Step 8 — Calibrate Settings

Calibrate by EZ Button

1. Press and hold the **EZ Button** until you hear **two short beeps** and then release.

2. The reader will search through various IP (image processing) settings in three steps (coarse, medium and fine) and match them with the highest read rates.

3. Upon successful completion of this routine, a green LED pattern will flash brightly and illuminate the symbol. If unsuccessful, the reader will emit **5 short beeps** and stop searching.

Note: To end all **EZ Button** functions, press the **EZ Button** once and quickly release.
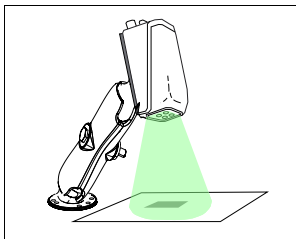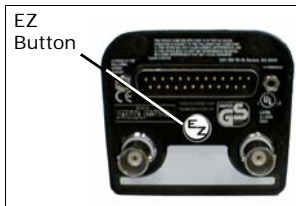
EZ Button

Calibrate by ESP

1. Click the **Calibrate** button in the Easy Setup Mode.
2. The reader will search through various IP (image processing) settings in three steps (coarse, medium and fine) and match them with the highest read rates.
3. Click **Close** when the "Calibrated successfully" message appears on the dialog box.

   After a short wait, the symbol's data and related features will be presented under the "Symbol Information" box below the image display pane.
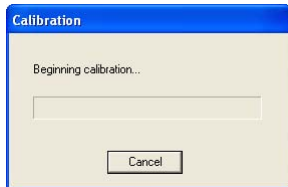
Attribute	Value
Calibrate	
Progress	Completed successfully. Parameters uploaded.
Number of Symbols	1
Symbol #1	
Symbol Data	Microscan
Symbol Type	2D
Symbol ID	]d0
Foreground pixels	3.7
Background pixels	3.9
Percent Cell Dama...	0 %
Contrast	68

Calibrate by Serial Command

Send **<op,6,1>** to begin calibration. Send **<op,6,0>** to terminate calibration.

Step 9 — Readability Test

This test indicates the percent of good decodes the reader is producing.

Testing by EZ Button

1. To start the read rate test, hold down the **EZ Button** for about 3 seconds until you hear **three short beeps** and see the alternating IP and finder pattern LEDs.

   While the symbol is being decoded, the read rate LEDs will indicate the corresponding read rate percentage on the side of the unit.

2. To end the read rate test, press the **EZ Button** and quickly release.

20%, 40%, 60%, 80%, 100% These LEDs are only active while the reader is in a read rate test and they represent the percentage of good reads per images captured.

Testing by ESP

1. Click the **Test** button in **EZ Mode** to start the read rate test.

   If your symbol has been successfully decoded, its data and related features will be presented under "Symbol Information". Also, while the symbol is being decoded, the read rate LEDs will indicate the corresponding read rate percentage on the side of the unit.

2. To end test, click the **Stop** button.

Testing by Serial Command

You can also start a test with the **<C>** or **<Cp>** command from a terminal and end it with the **<J>** command.

Step 10 — Applications

To make setup changes to Quadrus EZ, click the **App Mode** button. From here you can make changes in the configuration files that appear on the second row of icons.

You can also do the following:
- Send or Receive commands by clicking the **Send/Recv** button.
- Make changes to Camera options by clicking the **Camera** button.
- Access the **Terminal** window to see data or entering serial commands by clicking the **Terminal** button.
- Review status settings or make changes to operational commands by clicking the **Utilities** button.
- Format data for output by clicking the **Data Output Format** button.

For detailed explanations, refer to **ESP Help** in the pulldown **Help** menu.

Step 11 — Make Menu Changes and Save in ESP

To make changes to a configuration setting:

1. **Left click** the + to expand menu items.

2. **Double click** on the parameter and click once in the selection box to view options.

3. Place your cursor in the selection box, scroll down to the setting you want to change and **click** once on the setting.

Parameters	ESP Values
⊟ Communications	
⊞ Communications Mode	USB Keyboard
USB Keyboard Rate	10
⊟ RS232	
Batch Mode	Assume Always Co
Baud Rate	57.6K
Parity	None
Stop Bits	Two
Data Bits	Eight
Keyboard Mapping	US English*

US English*
ASCII - Universal
Custom

4. **Left click** again on the open screen to complete the selection.
5. **Right click** on the open screen and select **Save to Reader** to implement the command in the reader.

30

You have 3 choices for saving:

• **Send, No Save**: Changes will be lost when power is recycled.
• **Send and Save**: This activates all changes in current memory *and* saves to the reader for power-on.
• **Send and Save as Customer Settings**: Same as above, except that these settings are saved to a special section of NOVRAM.

Step 12 — Connect to Remote Video (optional)

You can view live video or triggered events such as a good read, noread, or slide show of on-going captures with a remote video monitor[1] connected to the video output port on the back of the Quadrus EZ.

Video Output

Video Input

To Enable Live Video, press and hold the **EZ Button** until you hear a series of **4 short beeps** and then release.

Note for CCD readers: When **Live Video Mode** is active, in order to synchronize with the video format, a shutter time of 1/1000 is the lowest shutter speed setting that can be applied to the camera settings. Slower shutter speeds will disable the video output.

When connected to a remote video with **Live Video Mode** active, the monitor screen is a close representation of the FOV. This allows you to visually verify that a symbol is within the FOV and the X-pattern is centered over it.

Note: During normal Read Cycle operations, the X-pattern will not be present unless enabled in ESP or by <K750,,1>.

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1. RS-170, non-interlaced monitor.

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