

Quick Start Guide

MS-3 Laser Scanner

This guide is designed to get your scanner up and running quickly. When connected to a host computer with Windows™ operating system (2000 or above), you can use **ESP** (Easy Setup Program) to configure and control your **MS-3 Laser Scanner**. In addition to **ESP**, you can send commands to your scanner by serial command and by the scanner's embedded menu.

For a full explanation of the MS-3's commands and features, refer to the Help section of **ESP** or the *MS-3 Laser Scanner User Manual*.

OMRON

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Warranty

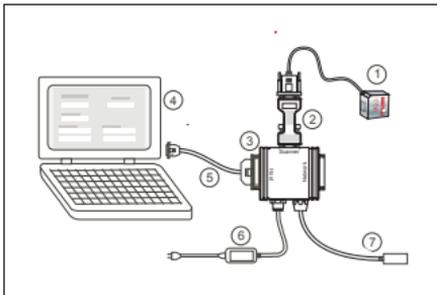
For current warranty information, see: www.microscan.com/warranty.

Step 1 — Check Required Hardware

Caution: If using your own power supply, be certain that it is wired correctly and supply voltage is 10 to 28VDC. Incorrect wiring or voltage can cause software or equipment failures.

If connecting to a host with an **IB-131 Interface Box**, you will need the following:

- **(1) MS-3 Laser Scanner**, FIS-0003-XXXX
- **(2) IC-331 Interface Converter**, 98-000050-01
- **(3) IB-131 Interface Box**, 99-400005-02
- **(4) Host Computer**
- **(5) Null Modem Configuration Cable**, 61-300026-01, DB-25 plug to DB-9 socket, 6ft.
- **(6) Power Supply**, 97-000012-02, 90-264 VAC, 24VDC, USA/Euro plug
- **(7) Object Detector** (optional), 99-4400021-03



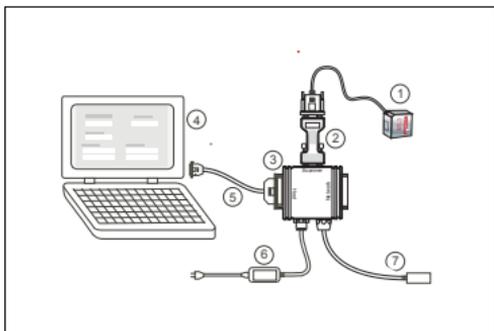
Hardware Required

Step 2 — Connect the System

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

To connect the system, do the following:

1. Connect the scanner (1) to the “SCANNER” connector on the **IC-331** interface converter (2) using the attached 3-foot custom cable.¹
2. Connect the **IC-331** directly to the “SCANNER” 15 pin connector on the **IB-131** (3).



Hardware Connections

3. Connect the **Host Computer** (4) to the **IB-131** “HOST” 25-pin connector via the **Null Modem Config. Cable** (5).²
4. Connect **Power Supply** (6) to the **IB-131** “POWER” connector.
5. Apply power to the system.

1. Since power supply is included in the single cabling assembly, the scanner cable should not exceed 3 feet. RS-232 cabling from the IB-131 to the host can be up to 47 feet provided it does not include power input.

2. If using your own null modem RS-232 host cable, be certain that the host's TxD connects to the scanner's RxD and the scanner's TxD connects to the host's RxD.

Step 3 —Install ESP

ESP Software can be found on the Omron Microscan Tools Drive that is packaged with the MS-3.

1. Follow the prompts to install ESP from the Tools Drive.
2. Click on the ESP icon to run the program.



Note: ESP can also be installed from the **Download Center** at www.microscan.com.

Minimum System Requirements

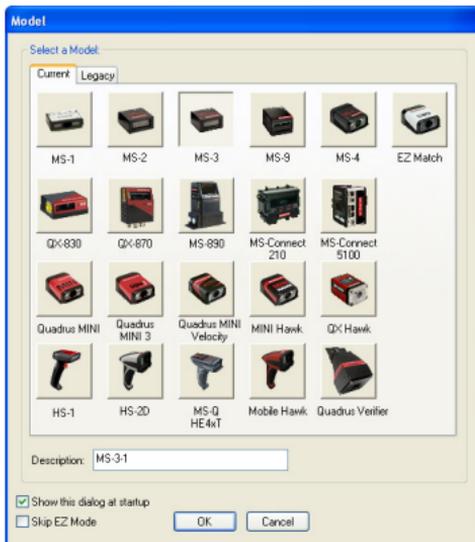
- 233 MHz Pentium PC
- Windows 8, 7, Vista, or XP operating system (32-bit or 64-bit)
- Internet Explorer 6.0 or higher
- 128 MB RAM or greater
- 160 MB free disk space
- 800 x 600 minimum 256 color display (1024 x 768 32-bit color recommended)

Refer to the *MS-3 Laser Scanner User Manual* for detailed information about using ESP to configure the MS-3.

Step 4 — Select Scanner Model

When you start the program, this menu will appear:

1. Select **MS-3 Laser** from the menu and click **OK**. If you do not want to make this selection every time you load **ESP**, uncheck “Show this window at Startup”.
2. Select the default name (**MS-3 Laser-1**, for example) or type in a file name of your choice and click **OK**.
3. Click **Yes** when the connect dialog appears.



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

Step 5 —Autoconnect

1. In the **Connecting...** dialog, if your communications port is not the default **COM1**, use the dropdown menu to change your communications port.
2. Click the **Start** button.

When connected, the scanner's settings will be loaded into **ESP** and the **CONNECTED** message will appear in a green box in the status bar at the bottom right of your screen.



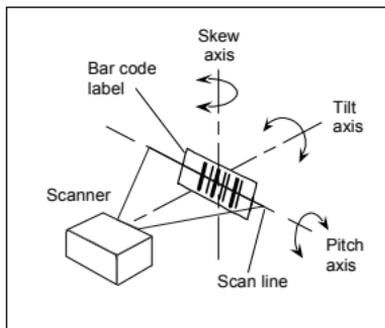
3. If the connection fails, enable a different **Com Port**, check connections, and try again.

Tip: If you do not see the **CONNECTED** or **DISCONNECTED** message at the bottom of your dialog, try expanding the **ESP** window horizontally.

Step 6 —Position Symbol and Scanner

Note: Code 39 is the default code type enabled. If you are uncertain as to your symbology type, enable all codes by selecting the **Auto Discriminate** macro in **Terminal** mode.

1. Set up a symbol at the distance you are using in your application.
2. Avoid bright light or IR light from other sources, including other scanners.
3. Pitch the symbol or scanner at a minimum of $\pm 15^\circ$ to avoid specular reflection (the return of direct, non-diffused light).



Symbol/Scanner Positioning

Step 7 — Test Read Rate

With this test you can learn the percentage of decodes per images captured by observing the LEDs (20% through 100%) on the top of the **MS-3** which are active during a read rate test. If the results are not satisfactory, move on to **Step 8 — “Calibrate the Scanner”**.

By ESP

After connecting to the scanner, **ESP** will open in **Setup Mode**.

1. Click the **Test** button in **Setup Mode** to begin the read rate test.
2. Follow the instructions in **Setup Mode**.
3. To end the read rate test, click the **Stop** button.



By EZ Button

1. Press and hold the **Test** button on the **MS-3** until you hear one beep and see one LED momentarily turn amber. This will signal the beginning of the read rate routine.¹
2. To end the read rate test press the **Test** button and quickly release.



¹ This assumes that the default functions of the test button have not been re-programmed.

Step 8 — Calibrate the Scanner

During the calibration routine, the scanner attempts various settings to determine the optimum decode rate for the given conditions. In this process it might do the following:

- Adjust laser power
- Adjust mirror motor speed
- Adjust AGC gain
- Enable Autodiscrimination
(read several symbol types)

The test will end automatically when the optimum combination of settings has been achieved.

By ESP

Click the **Calibrate** button in **Setup Mode** to begin the read rate test.

A rectangular button with a light beige background and the word "Calibrate" in a dark grey, sans-serif font.

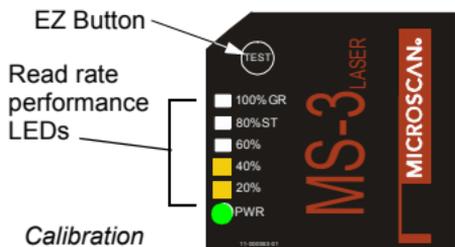
You can observe the progress of the calibration routine on the **Calibration** popup.

Note: You can also use the **Calibration** menu in **App Mode**.

By EZ button

Press and hold the **Test** button until you hear two beeps and see two performance LEDs turn amber to indicate that the calibration is in progress.

The scanner will beep once at the end of calibration.



Step 9 — Save Calibration Settings

After calibrating the **MS-3**, you can save your new settings to be available at power-on.

By ESP

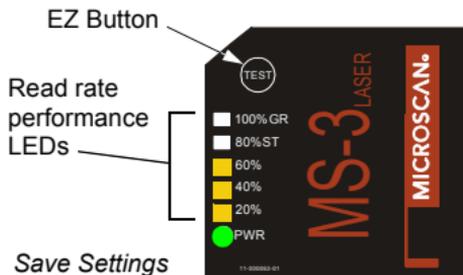
Caution: If you have settings in the scanner that you have not yet loaded into **ESP**, the **ESP** settings will overwrite the scanner's settings when you save. Under these conditions, it is highly recommended that you first select **Receive Reader Settings** before you save for power-on.

After testing and/or calibrating the scanner, you can save the settings for power-on by clicking the **Save** button.



By EZ Button

Press and hold the **Test** button until you hear three beeps and see three performance LEDs momentarily turn amber.¹



1. This assumes that the default functions of the test button have not been re-programmed.

Step 10 —Configure the Scanner

By ESP

To change scanner settings, or to access the **Utilities** or **Terminal** windows, click the **App Mode** button.

To return to the **Setup Mode**, click the **Setup Mode** button.

By Serial Command

From your terminal program or the **Terminal** screen in **ESP**, you can enter serial commands and configuration and utility commands.

Note: You can learn the current setting of any parameter by inserting a question mark after the number, as in **<K100?>**. To see all **K commands**, send **<K?>**.