

# DataMan<sup>®</sup> Setup Tool Reference Manual

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## Symbols

The following symbols indicate safety precautions and supplemental information:

WARNING: This symbol indicates a hazard that could cause death, serious personal injury or electrical shock.

**CAUTION**: This symbol indicates a hazard that could result in property damage.

(i) Note: This symbol indicates additional information about a subject.

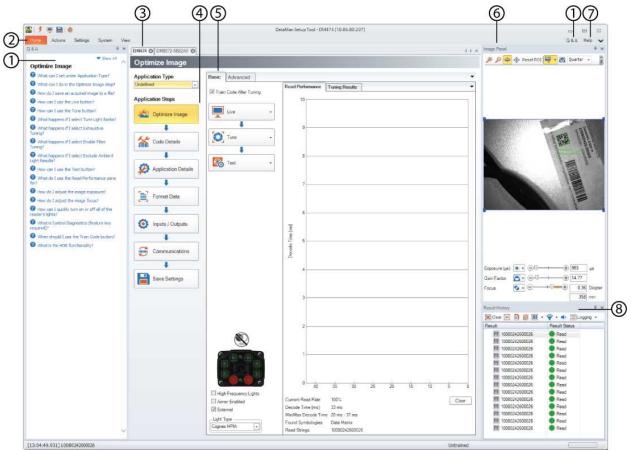
 $\bigvee$  Tip: This symbol indicates suggestions and shortcuts that might not otherwise be apparent.

## **Getting Started**

## About the DataMan Setup Tool

Using the DataMan Setup Tool, you can access a wide range of options involving DataMan readers and base stations, including reviewing images of the codes being read live, or setting up the reader to transfer NoRead Images via FTP for later review. The DataMan Setup Tool is a common platform across all models. It simplifies deployment by putting the most common controls in a single page, allowing you to see how different options affect the reader or the base station in real time.

## Overview



1	Q and A (context sensitive help)
2	Home pane
3	Documents (with the settings related to the devices you connect to)
4	Application steps
5	Tabs
6	Image Panel
7	Help (PDF, CHM and HTML help files)
8	Result History

The following sections provide more details about the installation of the software and the components of the GUI.

## **Installation and Layout**

This section explains the installation of the Setup Tool, the default layout of the Setup Tool GUI and the layout customization options.

## Installing the DataMan Setup Tool and Connecting the Device

Perform the following steps to install the DataMan software on the PC you will use to configure the settings for each DataMan device:

- 1. Check the DataMan *Release Notes* for a full list of system requirements.
- Download the DataMan Setup Tool from <a href="http://www.cognex.com/support/dataman">http://www.cognex.com/support/dataman</a> and follow the on-screen steps.

If the installation utility does not start automatically, double-click the setup.exe file in the download folder.

- 3. Connect your DataMan device to your PC.
- Choose Start->Cognex->DataMan Software vX.X.X->Setup Tool to launch the Setup Tool (where vX.X.X stands for the relevant revision of the software).
- If you connect DataMan devices through USB/serial, click *Refresh* to have the Setup Tool auto-detect them. For network devices, the Setup Tool automatically refreshes the list. Any DataMan device available over your network will appear in the Connect menu.
- 6. Select a COM port listing or Network device listing corresponding to your DataMan device and click Connect.

## Tabs

The tabs of the DataMan Setup Tool are context sensitive. When you first open the Setup Tool, you will see a tab next to the **Home** page: **View**.

11 - 210			DataMan Setup	Tool			- • •
fome View Connect	GRefresh - Grouping No	one	✓ Filter Filter	× 4	💾 🔲 View Hidden (12)		Q&A Hel
Maintenance	Name	Туре	Address	Firmware Version	Status Open in Documen	its Interface	MAC Address
Repair & Support	4 Conter Discovered Device	s					
Backup	DM260-UHD	DM260	10.86.80.65	5.7.0	Discovered	Network	00-D0-24-40-90-3C
Restore	DM262-3CF612	DM260	10.86.80.4	5.6.3	Discovered	Network	00-D0-24-3C-F6-12
Kesture	OM363-1C9848	DM360	10.86.80.82	5.7.0_sr2	Discovered	Network	00-D0-24-1C-98-48
Update Firmware	M473-3D7E9E	DM470	10.86.80.13	6.1.3_sr1	Discovered	Network	00-D0-24-3D-7E-9E

After selecting and connecting to a device, more tabs will be available.

🖀   🕴 💻 🌗 📓   Home Actions Settings	System View		DataMan SetupTool - DM474	4DA646 [10.86.80.35	5]		n Help	23
DM474-4DA646 O				d Þ ×	Image Panel		ф.	< >
Optimize Image					🔎 🔎 🧼 💮 Reset ROI 📑 🗸 🧭	Quarter 🕞		
Application Type	Basic Advance		]]	-				
Application Steps	Train Code After Tuning	Read Performance	Tuning Results					

Tabs also change based on the document you are actively using. For example, when using **Compare Configurations**, you will see the tabs below:

Home	Compare	View		
W	ce Add Con File	fig Remove	Reset Configuration	

There are further tab options on specific panes, for example on the **Format Data** pane.

DM260-UHD Ø				4 Þ ×	Result History
Format Data					🗙 Clear 🔟 📋 盾
r onnat Data					Result
Application Type	Basic Standard Perl Sty	le Scripting		•	100505691000
Undefined +					100505691000
	Basic Formatung				100505691000
Application Steps	Universal	Standard	Perl Style		100505691000
	Data Matrix	Standard	Perl Style		100505691000
🖄 Optimize Image	Data Matrix				100505691000

For further information on the tabs and their functions, see the respective sections in this document.

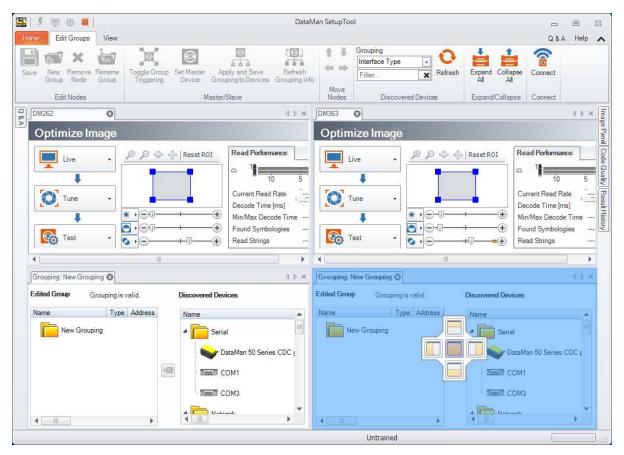
## Layout

The DataMan Setup Tool makes it possible for you to customize the layout to fit the computer screen or to make the desired components larger and the less used components smaller.

## Layout Customization

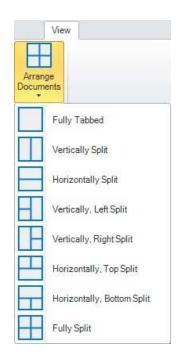
The customizable components of the Setup Tool are:

- documents
- groupings
- Image Panel
- Result History
- Process Monitor



#### Installation and Layout

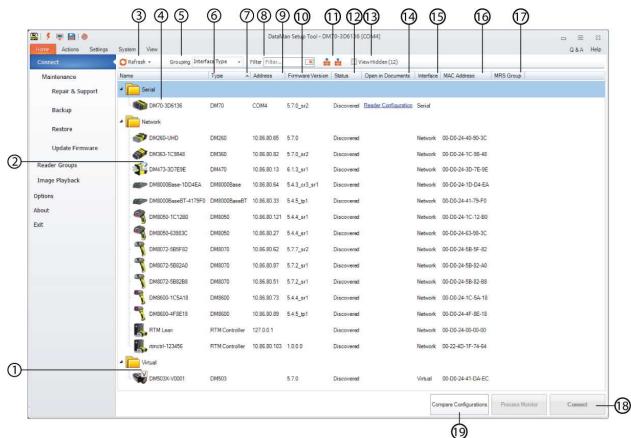
You can drag and drop the grabbed documents wherever you wish, but the ribbon bar under **View** also offers buttons for tiling the windows horizontally or vertically:



## **Setup Tool Home Pages**

## **Connect Page**

The **Connect** page allows you to connect to a single device or several devices at the same time. The devices are shown in a tree structure. The tree structure shows additional information for each device in separate columns.



1	Device marked with a V sign: virtually added device
2	Device marked with an arrow: manually added device
3	Refresh
4	Device name
5	Grouping (for more details, see Section Device Grouping)
6	Device type
7	Sorting
8	Filtering
9	IP Address
10	Firmware version
11	Expanding/collapsing the device tree
12	Device status
13	View Hidden
14	Open in Documents

15	Interface
16	The MAC address of the DataMan device
17	The Primary Reader Group the device belongs to in case of Multi-Reader Sync grouping
18	Connect
19	Compare Configurations

To hide a device, bring the cursor over the device, right click and then click **Hide From List**. You can unhide a device by checking the **View Hidden** checkbox.

Each device you connect to has its own tab, which is called a document. When you close a document tab, connection to the device is closed. If the device reboots (for example, because of a firmware update), the document tab remains open, and the progress bar and messages inform you about the state of the device. If a connection is lost, the document tab does not get automatically closed, an overlay message informs you about this event. If the reader goes offline, the overlay message remains visible until the device is rediscovered or until you close the document tab.

### **RTM Lean**

Real Time Monitoring (**RTM**) Lean is a feature built into the DataMan Setup Tool that allows for the collection and analysis of different kinds of data. RTM Lean collects data of devices on the network and displays this data in graphs. Connect to RTM Lean as a regular device on the **Connect** page.

Connect	C Refresh		1 N N	Filter Filter	× 📩	📫 🗆 V	'iew Hidden (12)		
Maintenance	Name		Туре	Address	Firmware Version	Status	Open in Documents	Interface	MAC Address
Repair & Support	<b>4</b> 📄 o	ther Discovered Devices							
Backup	1	DM260-UHD	DM260	10.86.80.65	5.7.0	Discovered		Network	00-D0-24-40-90-3C
Restore	-	DM363-1C9848	DM360	10.86.80.82	5.7.0_sr2	Discovered		Network	00-D0-24-1C-98- <mark>4</mark> 8
ALSO OF	4	DM473-3D7E9E	DM470	10,86.80.13	6.1.3_sr1	Discovered		Network	00-D0-24-3D-7E-9E
Update Firmware	1	DM474-586364	DM470	10.86.80.95	6.1.3_sr1	Discovered		Network	00-D0-24-58-63-64
eader Groups		DM503X-V0001	DM503		5.7.0	Discovered		Virtual	00-D0-24-41-DA-EC
mage Playback	-	DM8000BaseBT-4179F0	DM8000BaseBT	10.86.80.33	5.4.4_sr1	Discovered		Network	00-D0-24-41-79-F0
tions	9	DM8050-1C12B0	DM8050	10.86.80.121	5.4.4_sr1	Discovered		Network	00-D0-24-1C-12-B0
out	- 9	DM8072-5B82A0	DM8070	10.86.80.87	5.7.2_sr1	Discovered		Network	00-D0-24-5B-82-A0
it	9	DM8072-5B82B8	DM8070	10.86.80.51	5.7.2_sr1	Discovered		Network	00-D0-24-5B-82-B8
		RTM Lean	RTM Controller	127.0.0.1		Discovered	Real Time Monitoring	Network	00-D0-24-00-00-00

- 1. Connect to RTM Lean and select the device(s) you want to monitor.
- 2. Set your options in the **Settings** tab and/or the **Diagnostics** tab and click **Apply**.

#### **Setup Tool Home Pages**

0  f 💷 📾 🔕			Data	Man Setup Tool - R	TM Lean [127.0.0.1]			2
Home Real Time Monitoring	System View							Q&A Help
Performance Code Quality Eve Overview Overview Histo Aggregated View	nt Code Location ry Heatmap	NoRead Image History Detailed Views	Configuration Configuration	DM363-1C9848	*			
RTM Lean (3)	5	Detailed Views	Configuration	Devices		4 K V	Image Panel	д
						A P A		
Collection Configu Device Configuration		Settings Diagr	nstes	_		•	<u></u>	
Device DM363-1C9848	Collection Enab	Data Collection		a selected device				
DM473-307E9E	V	Deta	led Trigger Information f and Images (via FTP) led Trigger Information f Positions for Heat Map as Configuration Change	for NoReads for Good Reads	ion, enabling NoRead Image collectio	n and		
		Classification -					Image Panel 🔕 Code Quality 🕲	4 Þ
		RTM Controlle paired with a	r has the ability to collect DataMan.	t NoRead classifica	tions from a Cognex InSight device wh	en	Result History	4
		The InSight jo		oper symbolic tags i	n order for proper operation. See Help	file for	Result Result	Status
		details.	age Classifications from	InSight				
		Devic	-	'M	*			
		- Network						
		Alias name Device Addres Username	DM473-3D7E	E9E using the device alia	\$>			
	I.	Password						
						Apply		

The target device for data acquisition, as well as the selection of the type of data collected, can be set up under **Configuration** in the upper toolbar. By default, RTM Lean collects statistical data: Read Rate, NoRead count, average decode time, trigger count, trigger overrun, buffer overflow, and process control metrics, if enabled on the device.

For a more detailed description of RTM Lean capabilities and options, see the **Q & A** of the page that can be opened from the top right corner.

### **Troubleshooting a Failed Connection**

If you cannot connect to your reader, there are a number of settings you can verify.

- Click Refresh to determine which ports have readers connected to them. Clicking Refresh sends a query string
  on all COM ports and across the Ethernet network subnet. A DataMan 8000 wireless reader must be awake to
  respond to the query. Squeeze the trigger to wake up the reader.
- Make sure that you are not using the keyboard, keyboard wedge, or HID connection: you must use USB Serial, RS-232 Serial, Ethernet or Wireless network to connect the Setup Tool to the reader.

### **Serial Connection**

• Make sure that you have scanned the configuration code (USB COM or RS-232 Serial) that matches the type of physical connection you are using.

- Make sure that the COM ports list shows a port where your reader is connected.
- You can use a terminal emulation program such as PuTTY to determine whether the reader is sending any data if the reader is connected to a COM port on the PC.

#### **Ethernet Connection**

- Make sure that the firewall or antivirus application installed on your computer makes communication with Ethernet devices possible by allowing the appropriate ports. These are: Cognamer:1069 and Setup Tool:44444.
- Verify that your device appears in the list of Network devices.
- Make sure that the IP address you provided in the Add Network Device option is correct.

#### **Wireless Connection**

- Make sure that the reader is not in sleep mode. Squeeze the trigger to wake it up.
- Make sure that a connection is established between your reader and the base station connected to your PC. Unplug both the power and communication cables from the base station, reconnect the cables, then replace the handset in the base station. Wait until the handset indicates that it is linked (with an audible signal) before attempting to connect again.
- Make sure the base station is connected to power.

### Maintenance

The **Maintenance** page can be used to set the network settings of a misconfigured network device or change the HID mode of a serial device to CDC, as well as for backing up and restoring device configurations, and updating firmware.

### **Repair and Support**

Horie Actions Settings	System View				Ian Setup Tool - DM70-3D6136 [Ci				c e Q&A
Connect	😋 Refresh 🔹 💠 Add Network Devic	e 🕂 Add Virtual	Device 🔰 Rem	nove Virtual Device 🛛	arouping Interface Type - Filte	r Filter	III 🖬 💼 🖬	🔄 🛄 View Hidden (12)	
Maintenance	Name	Type 4	Address	Firmware Version	Status Open in Documents	Interface	MAC Address MRS	Group Network Settings	
Repair & Support	Serial     Serial     DM70-3D6136	DM70	COM4	5.7.0 sr2	Discovered Reader Configuration	Facial		Use DHCP Server     Use Static IP Addre	63
Backup	DM/0-306136	DM/0	COM4	5.7.U_\$F2	Discovered <u>Respect Colliguratori</u>	Serial		IP Address	10.86 80 11
Restore	<ul> <li>Network</li> </ul>							Subnet Mask	255 255 255 0
	DM260-UHD	DM260	10.86.80.65	5.7.0	Biscovered	Network	00-D0-24-40-90-3C	Default Gateway	10.86.80.205
Update Firmware	DM363-1C9848	DM360	10.86.80.82	5.7.0_sr2	Discovered	Network	00-D0-24-1C-98-48		
Reader Groups	DM473-307E9E	DM470	10.86.80.13	613.ar1	Discovered	Network	00-D0-24-3D-7E-9E	Device name	DM473-3D7E9E
Image Playback	DM8000Base-1DD4EA	DM8000Base	10000000000	5.4.3_cr3_sr1		1063004011	00-D0-24-1D-D4-EA		Copy PC Network Settings
Options	DM8000Base-TDD4EA	UMBUUUBase			Discovered			Reboot Device	Apply
	DM8000BaseBT-4179F0	DM8000BaseBT	10.86.80.33	5.4.5_tp1	Discovered	Network	00-D0-24-41-79-F0		
About	M8050-1C12B0	DM8050	10.86.80.121	5.4.4_sr1	Discovered	Network	00-D0-24-1C-12-B0		
Exit	Ф рм8050-63983С	DM8050	10.86.80.27	5.4.4_sr1	Discovered	Network	00-D0-24-63-98-3C		

2	Add Virtual Device	The <b>Add Virtual Device</b> function allows you to create a virtual device based on either a custom configuration file or a device with default configuration. This can be used to look at different panes in the Setup Tool without the need of a device to connect to. Pressing the button initiates a wizard that guides you through the steps of creating a virtual device. Initial options are to use a configuration/backup file for creation or use the factory default settings. After the wizard is finished, a new virtual device is added to the list of discovered devices, indicated by a V icon. The virtual device is not visible for others on the network. Even after closing the Setup Tool and opening it again, you only have to add the virtual device once. You can connect to the virtual device in the same way as a regular device. All configuration changes are rejected (everything is read-only) and no features, functions, and actions work on virtual devices.
3	Export icon	Clicking the <b>Export Cognex Support File</b> icon initiates Cognex Support File generation, which generates a .zip file containing a collection of preset data logs. This feature is only available if at least one device is selected. Clicking the button pops up a dialog box where you can specify the data types to be included in the support .zip file in a list of checkboxes. You can manually edit the <b>User Comment</b> field. The destination folder of the support file can be modified using the '' icon. You can select to open the containing folder after the file generation or send it as an attachment with the default email client (.eml). The output of the process is a .zip file. The file name contains the device name and the date of creation. An additional descriptor.xml in the zip contains the following data:
		• Date
		Discovery ID
		Device name
		Device type
		Serial number
		MAC address
		Feature Keys
		Communication interface
		Firmware version
		List of files present in the zip
4	Network Settings	Use the <b>Copy PC Network Settings</b> button to fill in the subnet mask and gateway information for your device. Make sure you manually update the IP Address to your device's IP address, after your PC network settings have been copied.

### Backup

Generate a backup file containing the configuration and logs of one or more devices. To do so, highlight the device(s) you want to backup and click the **Backup** button in the bottom right corner, or press **Alt+B**. If multiple devices are selected, each device generates a backup file. Each backup file is put in a subfolder that matches the name of the device. The backup file name contains the device name and date of generation.

The backup file is a .zip file with a .dmb extension. The file contains config.cdc, config.cfg, and descriptor.xml. The xml contains the following data:

- Date
- Discovery ID
- Device name

- Device type
- Serial number
- MAC address
- Feature Keys
- Communication interface
- Firmware version
- List of files present in the zip

Click the **Open Backup Folder** button to find the backup files. To change where backup files are saved, go to the **Options** page and edit the **Backup Location** box.

A Latest Backup Date column helps you keep track of the backup files. You can also sort devices based on the date of their backup by clicking Latest Backup Date.

### Restore

The **Restore** page allows the restoration of backed up configuration files on one or more devices. Select a device you want to restore and specify a configuration source in the **Configuration Source** window on top.

You have the following four options:

- **Configuration File**: the Setup Tool uses the specified configuration file for restoration. Click the '...' icon to specify the folder containing the backup file you want to use. Configure the folder in the **Options** page.
- Device: the Setup Tool uses a specified single device to restore its configuration to all target devices.
- Latest Backup: the Setup Tool searches for the latest backup for the selected devices. If multiple devices are selected, all devices get their own latest backup.
- Factory Defaults: the Setup Tool restores the device's configuration to factory defaults.

After the source is selected, as well as a target device (or devices), click the **Restore** button in the bottom right corner.

### Update Firmware

The **Update Firmware** page allows you to update the selected device or devices to the desired firmware version. In the **Firmware File** section on top, browse for firmware files by clicking the '...' icon. The right folder automatically opens. After selecting the firmware file, click the **Update Firmware** button to initiate the update. After a firmware update, the device reboots and automatically reconnects to the Setup Tool.

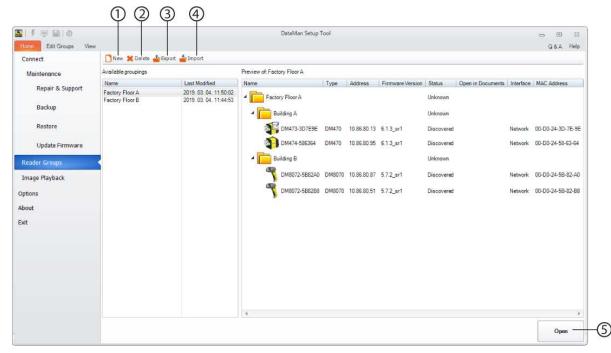
Firmware files are supplied as compressed archives. You must upload the firmware in its compressed form; do not attempt to uncompress a firmware file before uploading it.

## **Device Grouping**

Device grouping helps you manage a larger number of devices, as well as define Multi-Reader Sync groups. The DataMan Setup Tool offers built-in groups on the **Connect** page. You can also specify your own custom groups. Creating a new group or editing an existing group can be started from the **Reader Groups** page.

### **Reader Groups**

The available readers can be grouped on a custom basis and you can organize your readers in a custom tree. The list of already created custom groupings is shown on the left. When you select a custom group, it gets displayed on the right as a "preview".



1	Create a new group
2	Delete an existing group
3	Export an existing group
4	Import saved groups to the Setup Tool
5	Open an existing group

### **Custom Grouping**

Custom groupings are displayed in a tree structure. You can select different nodes and start different operations in them. The group editor tree supports drag and drop functionality. Clicking the **Edit Groups** tab to hide the settings options.

PQ3 (4)	5	6	78	90	φφ		13				
5 9 B 0					DataMan Setup	Tool					
Hone Edit Groups View											Q&A Help
Save New Remove Rename Group Node Group Edit Nodes	Toggle Grou Triggering	p Set Master Apply	Ind Save Refrest to Devices Grouping	te so nto Move Nodes		kpand Collapse Al All	Connect Connect				
Grouping: Factory Floor A (2) G	rouping Factory	Floor B O							d D X	Image Panel	4
dited Group Grouping is va					Discovered Devices						
Name	Type Add	ress Firmware Vers	ion Status Ope	n in Docume	Name	Туре	+ Address	Firmware Version	Status Or		
Factory Floor A			Unknown		- Network						
<ul> <li>Building A</li> </ul>			Unknown		DM260-1CB674	DM260	10.96.80.58	5.7.0_sr2	Discovered		
DM473-3D7E9E	DM470 10.8	16.80.13 6.1.3_sr1	Discovered		50 DM260-UHD	DM260	10.86.80.65	5.7.0	Discovered		
DM474-586364	DM470 10.8	6.80.95 6.1.3_sr1	Discovered		OM262-3CF612	DM260	10.85.80.4	5.7.0_sr2	Discovered	Image Panel () Code Quality ()	4.1
<ul> <li>Building B</li> </ul>					DM363-1C9848	DM360	10.86.80.82	5.7.0_sr2	Discovered	Result History	9
T DM8072-5882A0	DM8070 10.8	6.80.87 5.7.2_sr1	Discovered		OM473-3D7E9E	DM470	10.86.80.13	6.1.3_sr1	Discovered		
T DM8072-588268	DM8070 10.8	16.80.51 5.7.2_sr1	Discovered		DM474-586364	DM470	10.86.80.95	- 1144 (789 (197	Discovered		
					CM8000BaseBT-4179F	0 DM8000BaseB	T 10.86.80.33	5.4.4_sr1	Discovered		
					CM8050-1C1280	DM8050	10.86.80.121	5.4.4_sr1	Discovered		
				-0	CM8072-5882A0	DM8070	10.86.80.87	5.7.2 sr1	Discovered		
				12	DM8072-588288	DM8070	10.86.80.51		Discovered		
						DHIDDYO	10.00.00.01	0.72_077	Discovered		
					Virtual						
					DM503X-V0001	DM503		57.0	Discovered		
					DMA-EZCCM						
4	8										

The group editor has two device tree controls: the one on the left is the tree of the currently edited group, whereas the one on the right is the list of discovered devices. Filtering, grouping and sorting is available on this device tree.

1	Save	Save your changes for them to take effect. If you want to add a new group on the root level, you have to first save your first group, then click the Reader Groups page and click New. For more information, see <u>Reader Groups on page 16</u> .
2	New Group	If a new group is created, it automatically gets a root node. The name of the root node is also the name of the custom group. For each group, there can be only one root node. To create a new group node, select the desired target node and click the <b>New Group</b> button.
3	Remove Node	Select the target node(s) or a device on the left to remove it.
4	Rename Group	Click into the node's name, press F2 on the keyboard or click the <b>Rename Group</b> button. In the case of a root node, the whole grouping gets renamed. After the renaming is initiated by one of these methods, the group name becomes editable in the tree.
5	Toggle Group Triggering	Select a valid group node (the name of the group is fit to be a Multi-Reader Sync (MRS) group name) and press the <b>Toggle Group Triggering</b> button. The devices in the group are set to be part of the MRS group with the name of the group node's name. This option is available only if <i>all</i> readers in the group support Multi-Reader Sync triggering.
6	Set Primary Device	Select the device you want to designate as Primary Device.
7	Apply and Save Grouping to Devices	Click <b>Apply and Save Grouping to Devices</b> to save the grouping information to the devices in the selected group.
8	Refresh Grouping Info	Use this option to refresh the information belonging to the Edited Group (that is, the tree on the left).

#### **Setup Tool Home Pages**

9	Move Nodes	You can move a node in the edited tree. A node can be moved either up or down in its current group, into the next group or out of the current one. After selecting the desired node to move, the <b>Move nodes</b> option becomes available in the ribbon bar with the following arrows becoming green:
		Down: Move the node down among its siblings.
		Up: Move the node up among its siblings.
		<ul> <li>Out of Current Group: Move the node up one level (out of the current group).</li> </ul>
		<ul> <li>Into Next group: Move the node down one level (into the next group).</li> </ul>
10	Add Discovered Device(s)	Select one or more devices in the right-hand side device tree ( <b>Discovered</b> <b>Devices</b> ) and use the <b>Add Discovered Device(s)</b> button to add it to the currently selected group node on the left side ( <b>Edited Group</b> ). Alternatively, you can drag and drop a device from the right to the target grouping node on the left.
10	Discovered Devices	Select an option from the <b>Grouping</b> drop-down menu to reorganize the discovered devices list into groupings according to the picked option (for example, Device Type organizes the devices into groups consisting of the same device type). Typing in the <b>Filter</b> box allows you to filter for devices with names containing what you typed. Click <b>Refresh</b> to refresh the discovered devices list and to reapply the chosen filter type on the list.
11	Expand/Collapse	Expand or collapse the full tree, or you can expand or collapse specific nodes by clicking the triangle left of the node.
12	Connect	Connect to a device either in or outside a group.

(i) Note: The target node must not be a device node.

#### Managing Multi-Reader Sync Groups

In the DataMan Setup Tool, Multi-Reader Sync configuration is part of the grouping editor, but the ribbon bar also has tools to configure the Multi-Reader Sync trigger group. The following Multi-Reader Sync group management options are offered by the Setup Tool:

• Making a group to be a Multi-Reader Sync trigger (MRS) group: By selecting a valid group node (the name of the group is fit to be an MRS group name) and pressing the **Toggle Group Triggering** button, the devices in the group are set to be part of the MRS group with the name of the group node's name. This option is available only if *all* readers in the group support Multi-Reader Sync triggering.

• Clearing a Multi-Reader Sync group triggering: Selecting an MRS group node and click the Toggle Group Triggering button, then click Apply and Save Grouping to Devices. The MRS group entries are removed from all devices in the group.

• Setting the Primary device: Some trigger modes may require to explicitly specify the Primary device. This can be achieved by selecting a device in a Multi-Reader Sync group and clicking the Set Primary Device button. This function is also available in the case of trigger types that do not require a specified primary device, so it can be stored in the custom-edited grouping and be displayed at a later time.

• **Misconfigured MRS groups**: It is possible that the data regarding Multi-Reader Sync group triggering becomes different in the device from what was stored in the SetupTool. Warnings appearing in such cases help you identify these issues. The warning messages are the following:

- **Incompatible trigger types**: If the devices in the MRS group have incompatible trigger types, the node of the MRS group has a warning sub-node that displays this information. This is an error.
- **Primary device not specified**: The MRS group may not require a Primary device, but some trigger modes do require it, so this message is only shown as a warning.

- MRS group name mismatch: It is possible that the MRS group name stored in the device is different from what is stored in your own grouping. Click Apply and Save Grouping to Devices to solve the issue.
- **MRS info not available**: Discovering exact information about Multi-Reader Sync trigger settings cannot be done without at least a "minimalist" connection. Until the valid information is retrieved by pressing the **Refresh** button, this information entry is shown for the device.

## Image Playback

This page lets you view images that were transferred to the computer as set in **Data Logging** or the **Buffering and Transfer** pane's **Image PC Transfer** tab.

### Set Image Playback through Data Logging

- 1. Connect to the Setup Tool.
- 2. In the Image Panel on the right, click Logging.
- 3. From the drop-down list, select if you want to log NoRead images, decoded images, or both.
- 4. From the drop-down list, click Logging and reporting settings.
- 5. The DataMan Setup Tool Options window pops up. In the Data Logging tab, set the file path for your images.
- 6. In the Home page, click Image Playback.
- 7. Select the folder you set in Step 5 and in the bottom right corner click **Open**.

### Set Image Playback through Buffering and Transfer

- 1. Connect to the Setup Tool.
- 2. In the top, click Settings.
- 3. Click Buffering and Transfer.
- 4. Click the Image Buffering tab and set which images you want to buffer.
- 5. Click the Image PC Transfer tab. Here you can set the Transfer Folder and the Filename Format.
- 6. Start triggering.
- 7. As you trigger, you can see the number of buffered images increasing.
- 8. Click Transfer Now.
- 9. Click the Open in Image Playback button.

The images are opened in the Image Playback tab.

#### Setup Tool Home Pages

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Home Image	Playback Vi	RW .	Q&A	Help	~
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[16:48:55.153]1	10087970100001	Untrained			) <sub></sub>

**Setup Tool Home Pages** 

## Options

The **Options** page of the DataMan Setup Tool offers you to do settings in the application according to your preferences.

On the **General** tab, you can set the language, the codepage for code display, and the color scheme of the Setup Tool itself. You can also select a category which you want to reset to defaults. In addition, you can set the backup folder, the support file folder, the image buffering folder and the beeper here.

General	Data Logging	-		-	Hide All
					Options
Codepage for	r Code Display ———	-02		1	What can I set in the Options page?
Available C	and a second second	We	estern European (Windows)	•	The Options page of the DataMan Setup Tool offers you to do settings in the application according to your preferences.
Color Scheme					▼ What can I set in the Language Settings field?
Color Sche	me	Sil	ver	•	You can choose the language you would like to use Setup Tool with. The default is English.
Reset Setting	· · · ·				NOTE: The application needs to be restarted for the changes to take effect.
15.1	egory to Reset		Communication	Reset	What can I set in the Codepage for Code Display field?
Language Se Language	ettings ————		Layout Messages not to be shown again Data logging		You can set the way according to which the read string are encoded.
			Excluded devices		▼ What can I set in the Color Scheme field?
Cognex Supp	oort File Default Export F	older	Codepage Language		Select the code scheme of your DataMan Setup Tool window in this field.
C:\Users\xy	z\Documents		RTM Lean - All Settings Default folders	(a)	➡ What can I set in the Reset Settings box?
lmage Bufferi	ng and Transfer		Virtual Devices Verification		In this box, select a category (such as Communication or Verification) from the drop-down list which you want to reset to defaults.
Transfer Fo	Ider C:\	Users\xyz\	Beeper Assistants		What is the Backup Location setting?
Beeper Settir	ngs				You can set the folder here that is used by the <b>Backup</b> function for saving backup files.
Frequency	[Hz]	2750	1		What can I set in the Image Buffering and Transfer field?
Duration [m	sl	15			▼ What can I set in the Beeper Settings field?
Backup Loca	ation —	1.1			When the Setup Tool receives a good read result from the DataMan reader, it turns on the PC beeper. This is useful for DataMan readers which do not have an
C:\Users\xy	z\Documents				internal device beeper. You can set the Frequency, from 1000 Hz to 10000 Hz, and the Duration, from 10 ms to 1000 ms, of a good read beep.

On the **Data Logging** tab, you can set the folders into which *result codes*, *decoded images*, *NoRead images* and *reports* are to be saved.

General Data Lo	ogging	Show All
Result Code		What can I set in the Options page?
Path	C:\Users\xzy\Documents	What can I set in the Options page? What settings are available on the Data Logging
File Name		tab?
Decoded Images		O How can I enable the generation of data validation reports?
Path	C:\Users\xzy\Documents	
Filename Prefix		
Include Overlay Grap	phics (SVG)	
NoRead Images		
Path	C:\Users\xzy\Documents	
Filename Prefix		
🔲 Include Overlay Grap	phics (SVG)	
Reporting		
Path	C:\Users\xzy\Documents	
Filename Prefix		
Filename Structure	Include timestamp 🔹	
Preferred Quality Repor File Extension	t _pdf _*	
🔲 Include Overlay Grap	phics (SVG)	
Path Filename Prefix Filename Structure	Include timestamp	
🔲 Include Overlay Grap	phics (SVG)	

## About

The About page's pop-up window gives information about the installed DataMan Setup Tool, its version, a link to the support page and the copyright information.

## **Configuring the DataMan Device**

## Setting Up the DataMan Device

This section describes how to use the DataMan Setup Tool once you have connected to it. It contains information on the most essential functions that you can use when setting up your reader and reading codes.

## **Application Steps Overview**

After you connect to a device, the following page opens:

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Home Actions Settings System Vie	w		Q&A	Help 🗸
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On the left hand side you can see a column displaying **Application Steps**, with which you can quickly configure and set up your device. Most of the steps have basic and advanced setting options on different panes.

In the **Advanced** tab you have all basic and further configuration options. In a table-style view you can see the settings and the corresponding values. When you click a row in the table, you can either immediately set or change a value, choose a value from a drop-down list, or click the three dots at the end of the row line. In the last case a window pops up with further setting options.

- 1. Set the Application Type by selecting one of the options from the drop-down list.
- 2. Optimize Image is for light and imager settings, live display, tuning and testing.
- 3. Code Details is for symbology settings,
- 4. Application Details is for trigger settings, decode settings as well as displayed image settings.
- 5. Format Data provides setting options regarding data formatting including standard, perl style, and script-based.
- 6. Implement system settings in Inputs / Outputs.
- 7. **Communications** is for serial and Ethernet settings, network settings, custom commands and industrial protocol settings.
- 8. Click Save Settings to save your configuration to the device.

#### **Optimize Image**

The first application step is **Optimize Image**, providing you a means for a quick setup in one step. Three buttons (Live, Tune, and Test) help you setup the reader in this pane.

Image: Description of the state of the	器  🗲 👳 📾 💩	Data/Man Setup Tool - D/M474-disofa[10.86.80.96]	- D X
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Each button contains additional options that appear by clicking the arrow on the side of each button.

#### Live

Click the **Live** button to enter Live mode. Live mode not only monitors what the device sees, but it decodes as well. In the drop-down window of the **Live** button, you can find further options to configure Live mode and reader settings.

Live	•	
Decoding		
Focus Fee	Iback	
🗵 Automatic I	Exposure	

The following controls provide a subset of frequently used reader settings, which are duplicates of controls from other DataMan Setup Tool panes:

- Decoding: the device decodes the images taken
- Focus Feedback displays a color-coded meter on the right side of the image view. The meter indicates the focus of the lens (lower is less focused).
- Automatic Exposure: the reader automatically determines the best exposure settings.

In the **Image Panel**, you can change the region of interest (ROI) of the reader by sliding/dragging the blue ROI box. This is the area the reader will attempt to perform reads on.

#### Tune

Click the **Tune** button to automatically find the best settings for your reading. The advanced window reveals the following features:

	<ul> <li>☑ Tune Light Banks</li> <li>☑ Enable Filter Tuning</li> <li>☑ Exclude Ambient Light R</li> </ul>	Force Exhaustive Tuning     Optimize Focus During Tu esults
	Optimize Brightness	Advanced Application Details
	<ul> <li>Automatic Exposure</li> <li>Manual Exposure</li> </ul>	
	Maximum Exposure (μs)	
		20 200000
	Maximum Gain Factor	251,18
Þ	Optimize Focus	Advanced Application Details
	Train Code	Advanced Code Details
	Trigger Type	Continuous (external)
		1000000 🜩 µs 👻

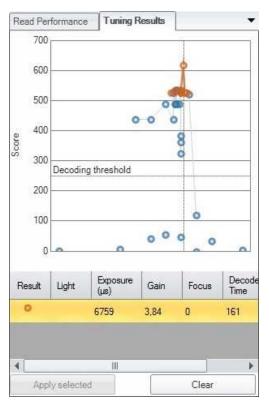
- Click Optimize Brightness to set the recommended brightness for your device automatically (only available if Manual Exposure is set), or, for advanced settings, click the link next to the button to navigate to the appropriate pane under Application Details. Alternatively, click the brightness icon under the image, or use the slider for manual brightness setup.
- Choose between Automatic Exposure or Manual Exposure as desired for your application. Camera gain can be controlled by a separate slider.
- Use the Maximum Gain Factor to set the target's maximum pixel brightness.
- Click **Optimize Focus** to set the recommended focus for your device automatically. For advanced settings, click the **Advanced Application Details** link to navigate to the **Advanced** tab under **Application Details** or the appropriate pane under **Light and Imager Settings**. Alternatively, click the focus icon under the image, or use the slider for manual focus setup.

(i) Note: Optimize Focus only appears when your device is equipped with a liquid lens.

- Click Train Code to train codes, or click the link next to the button to navigate to advanced code training settings.
- You can configure the reader with any of the following **Trigger Types** if **Manual Exposure** is set (some trigger types are not available on all devices):
  - Single
  - Presentation
  - Manual
  - Burst
  - Self
  - Continuous

For more information on trigger types, see <u>Application Details on page 31</u>.

The Tuning Results pane on the right shows a detailed tuning graph.



You can select a result other than the recommended one by clicking on it and then clicking **Apply selected** in the bottom row:

- If you set **Tune Light Banks**, the device tunes the light banks. If you know which light settings you want to use, disable it, so the tuning doesn't overrule your preset.
- Selecting **Exhaustive Tuning** will *force* tuning the light banks. When Exhaustive Tuning is disabled, and the reader succeeds to read the code with the primary light setting, it will stop to try other light bank combinations. If Exhaustive Tuning is on, the reader will continue to try all combinations to look for the best one, no matter whether or not the first one succeeded.
- If **Enable Filter Tuning** is selected, the DataMan Setup Tool applies filters to the read image. The filter that was used to successfully read the code is then shown in the Tuning Results window under **Image Filter**.
- If you want the focus to be automatically optimized during tuning, check the **Optimize Focus During Tuning** option.
- Exclude Ambient Light Results if you want to exclude ambient light results for the tuning process. Ambient light results are automatically selected otherwise, because they are the prevailing illumination type for fixed-mount readers.

#### Test

Click the **Test** button to test your device with a configuration, without any disruption to production.

Trigger On [ms]	0	-0	
Trigger Off[ms]	⊜-©		
Trigger(s) Per Se	econd: 0.5		

If you selected a trigger type that is external (that is, not Presentation or Self trigger mode) under the **Tune** button, you can trigger the reader automatically using <u>Test mode</u> to validate and test your application. You can set up an appropriate duty cycle for the reader using the **Trigger On** and **Trigger Off** times. The **Trigger(s) per Second** value shows the calculated trigger frequency.

You can reduce either Trigger On or Trigger Off times to reduce the cycle time, and thus increase trigger frequency.

Note: Depending on the read setup, code to read, and connection interface, there might be speed limitations. At higher speeds, it is recommended to disable image transfer. For more information, see the Q & A pane in the DataMan Setup Tool.

In the **Advanced** tab you have further configuration options. In a table-style view you can see the settings and the corresponding values for optimizing your image (**Image Size**, **Image Filtering**, **Focus Settings** and **Displayed Image Settings**) as well as setting light values (**External Lights** and **High Frequency Lights**).

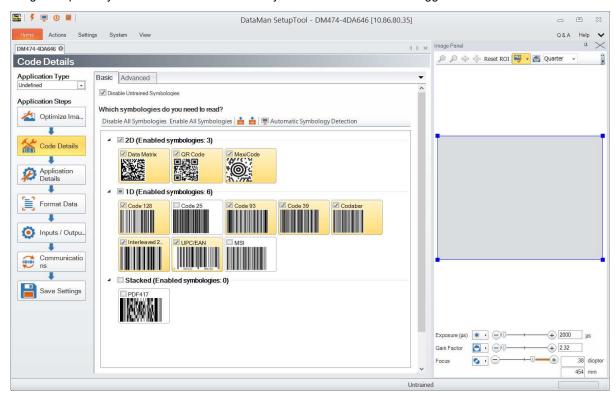
F 🖳 🗃 🔘		DataMan Setup Tool - DM474-586364 [10.86.80.95]	. 8
-	System View		Q&A H
74-586364 🔘		4 Þ ×	Image Panel
timize Image			🔎 🔎 🏟 🧑 Reset ROI 😽 👻 Quarter 👻
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fined	Non-Default Values	1 🛓 🛎	may not read.
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*	Tune Light Banks		
Code Details			
	Force Exhaustive Tuning		
1	Optimize Focus		
	Exclude Ambient Light Results		Sector Sector Sector Sector Sector Sector
Application Details	HDR	Off	
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+	QR Code / MaxiCode / Aztec Code	Original	
	DotCode	Original	
Communications	1D / Stacked / Postal	Original	
	No Read Image	Any	
•	4 Focus Settings		
Save Settings	Optimize Focus Feedback Enabled		
	Focus Settle Mode	Normal	
	Focus Steps	0 (Fixed Focus)	
	4 Focus Range	5 M 1 1960 5 20 100	
	Low	15:00	
	High	2.45	
	<ul> <li>Displayed Image Settings</li> </ul>		
	Light Settings		Exposure (µs) * - 4273
	Aimer Enabled	On	Gain Factor
	Partici Endured		
	Light Settings	,	Focus Carter Car

### **Read Performance**

With the graphs in the **Read Performance** pane on the right, you can monitor decode times and Read Rates in real time. Click the **Clear** button to reset the graph.

### **Code Details**

In this application step you can select the different types of symbologies to be used. On the **Basic** tab you can disable all or untrained symbologies and enable all of them. You also have the option to select 2D, 1D, Stacked and Postal symbologies separately and set the number of codes you need to read for each trigger.



In the **Advanced** tab you have further configuration options. In a table-style view you can see the settings and the corresponding values for general code details (**1D** or **2D**) as well as setting **Multicode** values and configuring codes for **Training**.

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Code Details				3.5.5	🔎 🔎 🧼 🍈 Reset ROI	🔫 🗸 🧭 Quarter 🕞
Application Type	Basic Advanced			•		
	📋 📋 📁 Non-Default Values 🛛 🗕 📜					
Application Steps		DM	74-4DA646	^		
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6.4	> 1D				-	1
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	Number of Codes					
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Save Settings				~	Exposure (JIS) (* ) Gain Factor (* ) Focus (* )	
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6				Unu aine	54	LJ

#### **Application Details**

This step deals with light and imager settings. The **Basic** tab gives you the opportunity to set the trigger types, its delay, timeout, interval and burst length. Exposure options and data can also be given.

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DM474-4DA646 O	d ▷ × Image Panel		7 >	$\times$
Application Detail	ils 🖉 🖉 🖗 🗄 Reset ROI 😽	🛛 🛃 Quarter 🕞		**
Application Detail Application Type In-Motion  Application Steps  Code Details  Code Details  Application Details  Format Data  Communicatio ns  Save Settings	Basic       Advanced         Trigger Settings       Continuous (external → Chi Trigger Assistant)         Delay Type       None         Interval (µs)       1000000 + µs         Interval (µs)       1000000 + µs         Exposure       Assistant         Exposure (µs)	Quarter	et [	
	Focus O D		l 8 diopt	ter
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	Untrained			1

You can configure the reader with any of the following **Trigger Types** if **Manual Exposure** is set (some trigger types are not available on all devices):

• **Single** triggering acquires a single image and attempts to decode any symbol it might contain. This trigger mode supports a read timeout.

(i) Note: If there are multiple read setups, it is possible that multiple images are taken.

- Presentation triggering continuously scans for a symbol and decodes it each time one is detected.
- Manual triggering acquires images as long as the trigger signal remains active, and stops when a symbol is found and decoded or the trigger signal ends.
- Burst triggering acquires a set number of images and decodes the first symbol it detects within the group. You can configure the number of images within each burst as well as the interval between each image acquisition. This trigger mode supports a read timeout.
- Self triggering is similar to presentation triggering in that the reader continuously scans for a symbol and decodes it each time one is detected. Unlike presentation mode, however, a decode attempt occurs with every image and the reader disables the Automatic Exposure settings that allow the reader to automatically determine the best exposure settings for a desirable level of brightness in the image. You can specify several parameters in self triggering mode, such as whether the reader will read the same code more than once or how long to wait before scanning for the next code. In Self trigger mode, the trigger interval indirectly specifies a read timeout.
- **Continuous** triggering acquires images as long as the trigger signal remains active. The reader acquires images at a specific interval and attempts to scan any symbol each successive image contains.

**Note**: Several fixed-mount readers have variants (such as S models or L models), and many of these only support certain trigger types. Please consult the appropriate Reference Manual to check what trigger types are supported by your variant.

Three different assistants (**Trigger Assistant**, **Interval Assistant**, and **Exposure Assistant**) help you in configuring these settings.

#### **Trigger Assistant**

- 1. If you have not already done so, first select an Application Type.
- 2. Click the Trigger Assistant button. A window pops up.
- 3. Select the **Trigger Source** from the drop-down list: Undefined, Internal or External. You get a recommendation from the assistant for the trigger modes. Graphical presentations of the trigger types help you decide. Select the trigger type and click **Save and Close**.

			Trig	gger Assistant		
Trigger Sourc	External	•				
Recommended tri	igger mode(s)					
Continuous (	(external)	Single (externa	al)	OBurst (exter	nal)	
tart	End	lart	End	t	End	
Trigger Signal		Trigger Signal	Single Image	Trigger Signal		
Acquisition	interval	Acquisition	Max Timeout	Acquisition	Interval Max Timeout	
						Save and Close Cancel

#### **Interval Assistant**

In the case of Self and Continuous modes the Interval Assistant can help you make further settings. You can select three ways to calculate the necessary data. In the top right corner select the units (standard or metric) you wish to calculate in.

With the help of **Field of View** you can calculate the longest possible interval time by measuring the physical field of view and giving the maximum line speed and the size of the longest code.

Clicking Lens / Distance to Code is calculating with the distance of the code from the lens. Give the focal length from the drop-down and select the direction in which the code is traveling. Here you also need to give the maximum line speed and the size of the longest code.

**Code Element Size** calculates with the size of the most narrow code element. Enable **Test Mode** to read your code. You also need to give the direction your code is traveling in, the maximum line speed and the size of the longest code.

At the bottom of the Assistant you get the recommended maximum interval time.

elect one of the below application of	details to input!	Units
		Metric
Field of View Size	O Lens / Distance to Code	O Code Element Size
easure the field of view size in the	direction of travel at the closest reading distan	cel
Live		
1		
1		••••••
1 PAS 10000	= , mo	
	■	
	■	
ŧ		
mm		
mm nter your maximum line speed		
mm ter your maximum line speed mm/s		
mm Iter your maximum line speed		

#### **Exposure Assistant**

Exposure Assistant works in case of In-Motion and Hand Presentation application types.

#### In-Motion Applications

For In-Motion applications, you can select three ways for your calculations: **Filed of View Size**, **Lens / Distance to Code**, and **Code Element Size**. Clicking **Field of View Size** helps you calculate the recommended maximum exposure time by measuring the physical field of view and giving the maximum line speed.

2711 325 31 55	(영제 영 - 제 별 - 영 - )	6				Units	
Select one of the below ap	plication details to inpu	ť				Metric	
Field of View Siz	e	O Lens / D	Distance to Code			Ocode Elem	ient Size
Measure the field of view s	size in the direction of tr	avel at the c	losest reading d	istance!			
Live							
		*	Individual		deal and a dealership		adapted 2
1			<b>*</b>				
P292 1111			A 125	8 U.U			
- E3 III			(				
£3		and and and and and and a	<b>(</b> 一 区)	5			
- F3 III			(二)	5			
 ₩			<b>(</b>   <u>(</u> )	8			
1	] mm		( <b>-</b> 12)	8			
1	] mm		- K	8			
Enter your maximum line s	] mm	μ5		5			
Enter your maximum line sp ment Exposure is: solute maximum exposure	] mm peed ] mm/s 534	A SET		5			
Enter your maximum line sp	] mm peed ] mm/s 534	μa μa		5			
Enter your maximum line sp	] mm peed ] mm/s 534	A SET		5			

Clicking **Lens** / **Distance to Code** calculates with the distance of the code from the lens. In case your reader is not equipped with a liquid lens, give the focal length from the drop-down list, and select the direction in which the code is traveling. Enter the maximum line speed here. You can enable **Test Mode** to read your smallest code.

posure Assistant		
1. Select one of the below application de	trile to insuff	Units
1. Sefect one of the below application de	aans to input	Metric
O Field of View Size	Lens / Distance to Code	O Code Element Size
2. Lens focal length		
Focal length: 0mm		
. Enter distance from closest reading p	point to end of reader module.	
4. Which direction is the code(s) travellin	ng in the image?	
	⊨⊠ ⅢⅢ ≣→	
5. Enter your maximum line speed		
mm/s		
. Enable Test Mode to read your smalle	est code (at the closest reading distance)	
Test Mode Code P	PPM is: ppm	
Current Exposure is:	534 µs	
Absolute maximum exposure	μs	
ISC		

**Code Element Size** calculates with the size of the most narrow code element. Enable **Test Mode** to read your code. Give the direction your code is traveling in and the maximum line speed.

isure Assistant		
Select one of the below application deta	ils to input	Units
		Metric
Field of View Size	O Lens / Distance to Code	Code Element Size
Enter the minimum x dimension of your	most narrow code element	
i		
16956 III III III		
1072 IIIIII		
mm		
Enable Test Mode to read your code (a	the closest reading distance)	
Code P	PM is: ppm	
Which direction is the code(s) travelling	in the image?	
•		
	•          ■ →	
•		
Enter your maximum line speed		
mm/s		
irrent Exposure is:	534 µs	
solute maximum exposure		
	μs	
		Save and Close Cancel

At the bottom of the Assistant you get the current and the recommended maximum exposure time.

### **Hand Presentation Applications**

If you have a Hand Presentation type application, present your code(s) to the reader in the positions you want to read them. The assistant analyzes the code size and changes the **Smallest element size** to the actual value.

xposure Assistant	
Please present your code(s) to the reader in the various positions you w	vill need to read them. The assistant will analyze the code size.
Smallest element size is - ppm.	

#### **Application Details Advanced Options**

In the **Advanced** tab you have further configuration options. In a table-style view you can see the settings and the corresponding values for triggering (**Motion Detection** and **Trigger Delay**), the imager (including **Image Mirroring**) as well as setting decode values.

🆀   🕴 🖳 🗃 🔕		DataMan Setup Tool - DM474-586364 [10.86.80.95]	- 8 %
Home Actions Settings S	System View		Q&A Help 🖍
💿 💿 🖄 💽	6 0 5	ــــــ 📮 🍈 🚔 📜 💭	
Back Forward Optimize Test M		Data Code Data Formatting Buffering and Communication System Table Setup 0	*
Image Setting	gs Setups Details Settings Va	alidation Quality Transfer Settings Settings View	
History	•	Panes Active Read	Setup
DM474-586364 @			d b x Image Panel ₽ 2
			p p 🖗 🚳 Reset ROI 😽 - 🛃 Quarter 🕞
Application Details			
Application Type	Basic Advanced		÷
Undefined			
	🖹 📋 📁 Non-Default Values		
Application Steps		DM474-586364	^
		Global Settings / Setup 0	
Optimize Image	4 Trigger Settings		
1	Trigger Type	Manual (button)	
	4 Motion Detection		
Code Details	Enabled		
	Motion Detection Sensitivity	Medium	
•	Timeout [s]	5	
Details	Burst Length	2	
	Interval (µs)	500 000	
+	4 Trigger Delay		
Format Data	Delay Type	None	
	Start Delay Time (ms)	0	
+	End Delay Time (ms)	0	1118320
	Start Delay Distance (mm)	0	
Inputs / Outputs	End Delay Distance (mm)	0	
	Timeout [ms]	2 000	
*	# Imager Settings		
Communications	Automatic Exposure		
	Maximum Exposure (µs)	200 000	
	Maximum Gain Factor	251,18	
Save Settings	Exposure (µs)	4 273	
Save Settings	Gain Factor	1,40	
	4 Image Mirroring	1.49	
	Flip Horizontal		
	Flip Vertical		
	4 Decode Settings		
			Exposure (µs) +
	Never Read Same Code Twice	0	Gain Factor 💽 🕨 💮 🕀 🕂 🕀 1.4
	Don't Reread Last N Codes		Focus Solution
	Delay Mode	Last read	
	Code Re-Read Delay [ms]	0	Result History      Image Panel
[13:22:12.084]1			Untrained

# **Format Data**

In addition to standard formatting possibilities, you have the option to write a script inside the Setup Tool. The script itself runs on the device for data formatting. Your device must be equipped with the Scripting feature key in order to use data formatting scripting.

You can enable script-based formatting under the **Format Data** application step's **Basic** tab. Clicking **Data Formatting** in the **Settings** pane also navigates you to the **Format Data** application step:

Home Actions Settings System View   DM474-4DA646 • Format Data   Application Type   Undefined     Application Steps   Image: Code Details   Image: Code Detai	🖀   🗲 💻 🕑 👪		DataMan SetupTool
Application Type   Undefined     Application Steps   Image: Construction of the period of the pe	Home Actions Setti	ıgs System View	
Application Type Undefined  Application Steps  Optimize Ima  Code Details  Application De	DM474-4DA646 O		
Undefined     Application Steps     Optimize Ima     Optimize Ima <th>Format Data</th> <th></th> <th></th>	Format Data		
Application Steps Optimize Ima Optimize Im		Basic Standard Perl Style Scr	ipting
Optimize Ima     Data Matrix     Image: Data Matrix	Ondermed	Basic Formatting	
Optimize Ima     1D / Stacked / Postal     1D / Stacked / Postal     QR Code / MaxiCode / Aztec Code     Script-Based Formatting     No Read Output String     No Read Output String	Application Steps	Universal 🔲 🔤	Standard Perl Style
ID / Stacked / Postal     ID / Stacked / Aztec Code     ID / Stacked / Postal     ID / Stacked / Aztec Code     ID / Stacked / Postal     ID / Stacked	🤌 Ontimize Ima	Data Matrix	<u>Standard</u> Perl Style
Code Details Application Details Format Data Communication Communication Communication Communication Communication Communication Communication Communication Communication Communication Communication Communication Communication Communication	Coptimize mid	1D / Stacked / Postal	Standard Perl Style
Application Details Format Data	+	QR Code / MaxiCode / Aztec Code	<u>Standard</u> EPerl Style
Application Details Format Data	Code Details	Script-Based Formatting	
Application Details Format Data	•	No Read Output String	
inputs / Outpu Communications			
Communication	+		
Communicatio ns	Format Data		
Communicatio ns			
	Dinputs / Outpu		
	+		
Save Settings	10101		
Bave Settings			
	Save Settings		

When script-based formatting is enabled, you can define a JavaScript module to format data according to your needs on the **Scripting** tab of the **Format Data** application step.

Format Data	
Application Type Undefined	Basic     Standard     Perl Style     Scripting       Data Formatting     FTP Storage     Communication
Application Steps	<pre>Enable Script-Based Formatting to configure settings on this pane Complete Word (*) Insert Snippet * // Default script for data formatting function onResult (decodeResults, readerProperties, output) {     if (decodeResults[0].decoded)     {         output.content = decodeResults[0].content;     } }</pre>
	99 kbytes left Ln 9 Col 1 Test

Click the Scripting tab.

If your DataMan device uploads its images to an FTP server, the images on the server get a certain file name. This file name can be customized with the help of the script that can be edited under the **FTP Storage** tab.

Format Data	
Application Type	Basic Standard Perl Style Scripting
Undefined	Data Formatting FTP Storage Communication
Application Steps	Enable Script Generated File Name for FTP to configure settings on this pane     M      A Complete Word      Insert Snippet
Code Details	<pre>// Default script for FTP file name generation function onGenerateFTPFilename(decodeResults, readerProperties, output) {     var ftp_filename = readerProperties.name + "-";     ftp_filename += readerProperties.trigger.index + "-" + decodeResults[0].i     return ftp_filename;</pre>
Format Data	<pre>} // Default script for FTP PCM report file name generation function onGenerateFTPPCMReportFilename(decodeResults, readerProperties, outp {     var ftp_filename = readerProperties.name + "-";</pre>
Communicatio	<pre>ftp_filename += readerProperties.trigger.index + "-" + decodeResults[0].i return ftp_filename; }</pre>
Save Settings	

On the **Communication** tab, you can edit your custom communication protocols.

Format Data		
Application Type	Basic Standard Perl Style Scripting	•
Application Steps	Data Formatting FTP Storage Communication	•
A Optimize Ima	Enable Custom Communication Script	
Code Details Code	<pre>// Default script for custom communication protocol function CommHandler() {     return {         onConnect: function (peerName)         {             // Disable the handler for this connection:             return false;         },         onDisconnect: function ()         {         }     } }</pre>	^
Communicatio	<pre>}, onError: function (errorMsg) { }, onExpectedData: function (inputString) { return true; }, onUnexpectedData: function (inputString) { return true; }</pre>	
Save Settings	<pre>return true; }, onTimer: function () { }, onEncoder: function () { }; };</pre>	v
	99 kbytes left Ln 28	Col 1

For more information on the custom communication protocols, see the **DataMan Communications and Programming Guide**.

The script for data formatting not only allows you to have different data formatting combinations, but you can also perform operations on the output channel, for example, to pull output 1 up. You can configure read results flexibly and configure reader events before the result returns.

For the details of how to write the script and for scripting examples, please see the **DataMan Communications and Programming Guide**. In the Setup Tool, you can find scripting samples by clicking the arrow of the **Insert Snippet** dropdown menu or right-clicking within the text field and selecting **Insert Snippet** from the pop-up list.

You can open your own scripts through the DataMan Setup Tool's **Scripting -> Open Script...** option.

#### Inputs / Outputs

This application step is the place to configure the device I/O.

The **Basic** tab enables you to configure the behavior of the trigger and tune buttons, inputs, outputs and pulse encoder data. Height sensor data can also be set for devices for which it is relevant.

	🖺   🕴 💻 🗎 I 💩		DataMan	Setup Tool -	DM474-586364 [	10.86.80.95]			0	
	Home Actions Settings S	System View							Q & A	Help
1	DM474-586364 (2)									4 1
Î	Inputs / Outputs									
ľ	Application Type	Basic Advanced				_				
	Undefined T	Device Name		Device	Description					
		DM474-586364			Floor 5					
	Application Steps		1			1		and the product		
	🖄 Optimize Image	TRIG Button TUNE Butt	an University	Outputs	Output Delay	Pulse Encode		ranster		
			0		1		2		3	
	+	Events						1000		1000
	Code Details	I/O Direction					Input	~	Input	~
t		Strobe								
L	+	Read								
	<b>**</b>	No Read								
	Application Details	Validation Failure								
	+	Trigger Overrun Buffer Overflow				8			Z	
	r_1	User Event 1				8				
	Format Data	User Event 1								
	1	Action							<u> </u>	
		Open								
	Inputs / Outputs	Closed		2			2			
		Pulse Width [ms]	5	, territa	\$ 5			*		0
	Communications									
	Communications									
	-									
	Save Settings			Error LEE	) Pulse Duration (m	el				
		Enable Beeper on Good	Read	<b>9</b> 7-						
		Beep Length (ms)		12.12						
		· · · · · · · · · · · · · · · · · · ·	<b>F</b> (+) 50	0	300	00				
		0	50							
		Light Ring Pulse Duration (r	ms]							
				5						
112										

1	Light Ring Pulse Duration	For readers with a light ring, the duration of the light ring's illuminated state can be specified here in milliseconds.
2	Enable Beeper on Good Read	Set the Beep Length for good reads to a value between 0 and 50 ms.
3	Error LED Pulse Duration	You can move the slider to the desired millisecond that is used to determine how long the Error LED pulses on fixed-mount devices. The Error LED is found on the top of the device. Setting the slider to '0' causes the red error LED to turn off if the device log is retrieved, while every value above '0' causes the red error LED to turn off automatically after the selected time is expired.
4	Closed	The open or closed state means the state of the relay. If an Event happens from the list above, the output can be open or closed. For example, if a Read event happens, in the case of Closed, the output 0 will become output 1. Also, you can
5	Open	close an output line indefinitely by specifying a pulse width of 0 milliseconds, but be aware that any event that triggers this output line will cause it to remain closed until you cycle the power to the reader or clear outputs with a discrete input setting.
6	Buffer Overflow	Buffer Overflow means that it would be possible to acquire an image, but there is no space left to save it. In other words, images are acquired faster than they can be processed. One possible situation is when decoding takes longer than what the image/trigger interval is.

7	Trigger Overrun	Trigger Overrun means that the image could not be acquired because the camera was busy (for example, due to an ongoing burst or a long exposure).
8	Strobe	You can reserve an output for external illumination by checking Strobe on one of the output lines. You can also configure polarity by choosing Open or Closed in the appropriate Outputs column.
9	Device name	You can give the device a more meaningful name for your production environment, such as the location or the inspection task.
10	TRIG Button	<ul> <li>You can choose trigger button press functionality only in Single, Burst, and Self trigger modes. The 3 second button press action possibilities are the following:</li> <li>Optimize Brightness</li> <li>Optimize Focus (if your device is equipped with a liquid lens)</li> </ul>
		Read Configuration Code
		Train Code
		Set Match String
		Test Mode
		You can also check <b>Disable Reader Button</b> if you do not want the physical TRIG button on the reader to work.
		When a checkbox is selected, the action assigned to an input does not occur immediately after activating the input. It takes place only when the next trigger is performed.
11	TUNE Button	Check the <b>Disabled Reader Button</b> if you do not want the physical TUNE button on the reader to work.
12	Inputs	In addition to the different actions that you can use the input line for, here you can also set the change in signal that triggers an image acquisition (under <b>Polarity</b> ). Use <b>Debounce Delay</b> to define how long the trigger signal must be detected to be recognized as valid. Use a shorter value to compensate for ESD line noise and higher values to compensate for noise in electromechanical relays. You might have to experiment with the setting to choose the most appropriate value for your production environment.
13	Outputs	The <b>Outputs</b> tab lets you configure the behavior of all output lines available to the reader. For any line you can configure the event and action of the output line.
14	Device Description	Device description is a freely editable text field where you can add notes to the device or important additional information.
15	Output Delay	Set the output delay in Manual, Single, Burst, and Continuous trigger modes. When using a pulse encoder, you can specify the distance to the output and map the pulse to the distance. The distance to output value is corrected based on the value of the resolution (it is adjusted to the closest multiple of resolution rounded to millimeters). Use the <b>Distance to output (mm)</b> control to set the distance from trigger to when the result is output.
16	Pulse Encoder	When using a pulse encoder, you can specify the distance to the output and map the pulse to the distance. The distance to output value is corrected based on the value of the resolution (it is adjusted to the closest multiple of resolution rounded to millimeters). Use the <b>Resolution (mm)</b> control to define the resolution.
17	Buffering and Transfer	For more information on <b>Buffering and Transfer</b> , see <u>Buffering and Transfer on page 52</u> .

The **Advanced** tab provides you with a table-style view of the settings you can configure on the **Basic** tab. In addition to setting the device name and description, you can configure the TRIG Button, the TUNE Button, Input and Output lines, Output Delay, and a Pulse Encoder.

tome Actions Settings 1	System View		Q&A Hel	p •
M474-586364 O			1	4 ₽
nputs / Outputs				
North March 1997				
Application Type	Basic Advanced			
Jndefined 🔹	📄 🎒 📁 Non-Default Values 🔹			
Application Steps		DM474-586364		^
17.		Global Settings / Setup 0		
🚵 Optimize Image				1
	Device Name	DM474-586364		
	Device Description			
Code Details	# TRIG Button			
*	Disable Reader Button			
Application Details	4 TUNE Button			
	Disable Reader Button			
ŧ	4 Inputs			
Format Data	► <b>0</b>			
	>1			
ŧ	Þ 2			
AL	b 3			
Dinputs / Outputs	▶ Outputs			
1	▶ Output Delay			
	4 Pulse Encoder			
Communications	Resolution (µm)	5 000		
	Encoder Direction Options	Standard		
•	Double Rate			
Save Settings	4 Decode Settings			
	Never Read Same Code Twice			
	Don't Reread Last N Codes	0		
	Delay Mode	Last read		
	Code Re-Read Delay [ms]	0		
	▶ Wake-up Message			

Under **Decode Settings**, you can set **Never Read Same Code Twice**. This suppresses the reporting of the same code string twice in a row and within a single trigger sequence when enabled. It is available for all trigger modes, but is only valid in Multicode Reading, since the only way to get more than one code in a single trigger sequence is in Multicode Readings. If **Never Read the Same Code Twice** is unchecked, the device re-reads and re-transmits the same code after the specified **Code Re-Read Delay (in milliseconds)**.

Under **Wake-up Message**, enable or disable **Output Diagnostic String on Wake-up**. When enabled, the reader transmits a diagnostic string whenever the reader starts up. For Telnet connections the readers transmits the diagnostic string with each new connection. For serial connections, the baud rate is automatically set to 38,400 when the message is sent, regardless of the settings made in the Setup Tool.

#### Communications

On the three tabs of the **Communications** application step, serial and Ethernet settings can be implemented. Click the appropriate tab to enter your setting values.

On the **Serial** tab, you can configure serial port values (speed, parity, data bits, stop bits or RS-232 Inter-character Delay (ms)) as well as USB connection settings.

🧚 🖳 📓 🔕	DataMa	n Setup Tool - DM70-3D6136 [COM4]	- 0
Actions Settings	System View		Q&A Help
M70-3D6136 (2)			4.1
Communications			
pplication Type	Serial Advanced		
ndefined	- Serial Port Settings		
	Speed	115200	
oplication Steps		Land Land	
4	Parity	None	
🖄 Optimize Image	Data Bits	8	
L	Stop Bits	1 +	
14	RS 232 Inter-character Delay (ms)	0 🗢	
Code Details			
	USB Connection		
•	Re-enumerate on Firmware Start		
Application Details	Used communication channel	USB-COM only	
+	USB Speed	USB 1.1 mode	
Format Data		USB 2.0 mode	
	HID Mode Inter-character Delay (ms)	0 🔹	
ŧ			
Inputs / Outputs			
Inputs / Outputs			
ŧ			
Communications			
1			
-			
Save Settings			
	U.		
		Untrained	C

By default, the DataMan reader uses a USB driver that can help the reader recover from an electrostatic discharge (ESD) event. Use **USB Driver Compatibility Mode** if you require strict conformance to the USB specification.

In the **Used communication channel** option, you can set the communication method via USB. Depending on the used device, the following options are available:

- USB-COM only: Choose this option to reach the device through a serial port.
- USB-HID only: This option ensures that the device will behave like a USB keyboard.
- USB-COM + USB-HID: This is a combination of the above modes.

Note: In the case of USB-COM only, some devices may also be listed under HID devices, even if they lack HID functionality.

On the **Ethernet** tab, configure network settings for your wireless or tethered reader. If you are using a wireless reader, configure network settings on the base station.

🕴 📮 🔡 💩	DataMan Setup Tool - DM474-586364 [10.86.80.95] System View	
	system view	
M474-586364 Ø		4
Communications		
Application Type	Serial Ethernet Advanced	
Jndefined 💌	Use DHCP Server	
pplication Steps	OUse Static IP Address     IP Address     To.86.80.95	_
🖄 Optimize Image	Subnet Mask 265.255.255.0	
	Default Gateway 10.86.80.205	
× •	DNS Server 10.86,169.1	
Code Details	Domain name	
+		
Application Details	Copy PC Network Settings	
ŧ	Telnet Telnet Port	
Format Data	- Industrial Protocols	_
• •	EtherNet/IP" PROFINET SLMP Protocol Modbus TCP	
Inputs / Outputs	Only one protocol may be enabled.	
Minputs / Outputs	Use Name of Station	
ŧ.	Name of Station dm-bud	
Communications		
-	Status:	
•	- Network Client	
Save Settings	Enabled	
	Host Address : 1000 🜩	
	Untrained	

Select the **Use DHCP Server** option to have the reader assigned an IP address by a DHCP server (if one is available), or enter the network settings manually. Contact your network administrator for an appropriate value or click **Copy PC Network Settings**. Your own PC network settings will be copied in the above fields, including the IP address of your computer. Make sure you do not forget to update this to the IP address of your reader.

Under **Telnet**, you can set the **Telnet Port**. The reader allows TCP connections to port 23, which is the default TCP port for Telnet applications. If you use a Telnet client, the only parameter you will have to provide is the reader's IP address. If you are using another application or SDK to connect, make sure that it uses the same TCP port setting as your reader does. The reader will automatically send code output over this connection. You are able to transmit DataMan Control Commands (DMCC) over this connection as well.

Under Industrial Protocols, you can choose one of the following protocols: EtherNet/IP, PROFINET, SLMP Protocol or **Modbus TCP**. The Status field of the industrial protocols displays the last logged message of the status dialog. The message will remain displayed until another message is logged. If no industrial protocol is enabled, the status field remains blank. Status messages vary by protocol, and some protocols do not log any messages.

For **Modbus TCP**, you have the option to set **Idle Timeout**. **Idle Timeout** is the amount of time that a port is held open with no outgoing traffic. Once the reader opens a connection to an FTP server, the reader keeps that connection open as long as traffic occurs. If no traffic occurs for the set Idle Timeout period, the connection is closed. This can be useful if an FTP transfer only happens seldom and the network overhead for keeping the connection open is not desired.

The **Network Client** behavior is a means for the reader to actively open an Ethernet connection to another device on the network. Once open, the connection will have the same basic operational behavior as the DataMan Telnet connection; it can produce read results (transmit results to the external device) and it can act as a DMCC server (process commands received from the external device).

For further information, see the Dataman Industrial Protocols Manual.

In the **Advanced** tab you have further configuration options. In a table-style view you can see the settings and the corresponding values for serial and Ethernet connections.

Application Type	Serial Ethernet Advanced			
	📄 📋 📁 Non-Default Values	- E 🛔		
Application Steps		DM474-4DA64	5	^
🖄 Optimize Ima		Global Settings / Setup 0 🔡	Setup 1	
	⊿ Serial			
+	Speed	115200		
Code Details	Parity	None		
Code Details	Data Bits	8		
↓ I	Stop Bits	1		
pplication	RS 232 Inter-character Delay (ms)	0		
Details	Used communication channel			
1	Enable Multi-Port (RS-232 Sharing)			
<b></b>	✓ Ethernet			
Format Data	Use DHCP Server			
	IP Address	10.86.80.0		
•	Subnet Mask	255.255.255.0		
🚺 Inputs / Outpu	Default Gateway	10.86.80.205		
w .	A Non-Printing Characters			
+	Translate Unprintable Chars			
Communicatio	4 Custom Commands			
ns	▶ Serial Trigger			
+	▶ Echo Commands			
	A Network Settings			
Save Settings	Authentication			
	▶ Telnet			
	Network Client			
	Industrial Protocols			
	▶ EtherNet/IP**			
	▶ PROFINET			
	SLMP Protocol			
	Modbus TCP			

In addition, you can set **Non-Printing Characters**. Normally, the raw values for non-printing characters are transmitted when the reader is configured for COM communications. These values are not visible at all when the reader is configured in keyboard wedge configurations. You can configure the reader to convert non-printing characters into sequences of keyboard printable characters such as <CR> by enabling the Translate Unprintable Characters feature. Eight-bit ASCII character codes with values of 0x00 through 0x1F and 0x7F are converted when **Translate Unprintable Characters** is enabled.

Under **Serial Trigger**, the **Trigger ON** and **Trigger OFF** commands support a character limit with a resulting sequence that may have, at most, 32 bytes. Depending on how many escape sequences you use this means that the valid length of the acceptable string can vary between 32 characters (no escape sequences) and 128 (32 \* 4-char escape sequences [e.g. \002]) characters.

Under **Custom Commands**, you can also set **Echo Commands**. When enabled, Echo Commands will echo back the commands you send to the reader as soon as the command, delimited by the Command Header and Command Footer strings, is received. Custom commands are provided to be used by a PLC or similar device and not intended to be manually entered. The inter-character delay is set to a small value, roughly 50 ms, so that slow typing of a custom command will be not recognized past the first character. A **Trigger ON** or **Trigger OFF** command greater than a single character must be sent as a string from another application.

# **Save Settings**

When you are finished with the application steps, click the **Save Settings** step to save all your configuration at once. In a pop-up window, the Setup Tool informs you that your configuration changes will be saved. You can cancel at this point and make further changes. You also have the option to check the **Don't show this dialog again** box.

Used communication channel	
Enable Multi-Port (RS-232 Sharing)	
Ethernet	
Use DHCP	
IP Address Subnet Mae	will be saved to the reader
Default Ga	
DNS Serve	OK Cancel
Domain na	in
Translate Unprintable Chars	
Custom Commands	
The second second	

# Actions

After connecting to a device, several tabs appear next to Home.

When you click the Actions tab, the following ribbon bar pops up.

8 7	<b>P B</b>	6				D	)ataMan Setup	Tool - DM474	-586364 [10.86.80	1.95]	-		83
Home	Action	s Settings Sys	tem View								Q&A	Help	V
Back I	) Forward	Frigger Input Line 1	Input Line 2 Action	Input Line 3 Action	Live Optimize Brightnes	optimize s Focus	Tune Train		t Switch to Process Monitor	ining Upload Image [Ψ] Train Image			-
Hist	tory		Trigger				Actions			Images			

You also have the option to keep the bar visible while you are looking at other panes of the Setup Tool by clicking the downward arrow next to **Help** in the upper right corner.

On the **Actions** tab, you can issue or simulate a trigger or input line action, enable live display, optimize brightness and focus, and tune the reader. You can also enable Test Mode here. For more information, see <u>Test Mode on page 49</u>. Click **Switch to Process Monitor** to start the Process Monitor. For more information, see <u>Process Monitor on page 60</u>. You can also upload and train images and codes on this tab.

# Settings

After connecting to a device, several tabs appear next to Home.

When you click the Settings tab, the following ribbon bar pops up.

814	💻 🗎	0							DataMan Setu	p Tool - DM47	4-586364 [10.86	5.80.95]		-	۲	23
	Action	s Settin	gs Syste	em V	iew									Q & A	A Help	~
Hack	) Forward	Optimize Image	Test Mode Settings	Read Setups	Application Details		Data Validation	Code Quality	Data Formatting	Buffering and Transfer	Communication Settings	System Settings	Setup 0			
Hi	story	Ť				*		Panes	*		•	•	Active Read Setup			

This section deals with the various configuration options available in the Settings ribbon bar.

#### **Test Mode**

**Test Mode** lets you configure and test a reader that is connected to a production line without needing to slow down or stop your line. While in Test Mode, the reader by default ignores all external trigger sources and disables all input and output lines. To enter **Test Mode**, perform one of the following actions:

- Press the button (to which you previously assigned this function in the Setup Tool's **Inputs / Outputs** pane's **TRIG Button** tab) on the device for 3 seconds
- Send a DataMan Control Command (DMCC)
- Click the Enable Test Mode button in the DataMan Setup Tool (Actions)

In the ribbon bar under **Settings** in the Setup Tool, click **Test Mode Settings**. The Test Mode Settings pane appears. Check **Automatic Triggering Enabled**, and the reader will simulate external triggers at the interval that you specify.

🎬   🗲 💻 🕐 📓 DataMan SetupTool - DM474-4DA646 [10.86.80.3	35]	_ 0	23
Home Actions Settings System View		Q&A He	lp 🔨
Image Settings Setups Details Settings Validation Quality Formatting Transfer Settings	System Table View		
History Panes	Active Read Set.		<sup>₽</sup> ×
DM260-aremenyi O DM474-4DA646 O	Image Panel		6.3
Test Mode Settings	🔎 🔎 🀳 💮 Reset ROI 😽 🛛 🗭	Quarter -	** Ŧ
Application Type       In Test Mode some features are limited or disabled. See Q&A for details.         Application Steps       Automatic Triggering         Image: Code Details       Image: Code Details         Image:	Exposure (JIS) (IIS) (II	-+ 1.69	μs
	Focus		mm
Untraine	d		

If Automatic Triggering is not enabled, click **Accept Trigger Batch** in the **Input / Output State** field, and the reader will accept and process a limited number of external triggers at production speed.

In both cases, you can view images and decodes using production settings, but at a slower rate and without sending output signals to your line.

## Read Setups

It is possible to configure a variety of acquisition parameters for your DataMan reader in a unified Read Setups pane.

Under Settings click the Read Setups button. The Read Setups pane appears.

Home Actions Settin	gs System View Read Setups					Q&A Help
Actions Setun Action Setun Add Def Setup Set	Setup 100000000000       Last Successful Decode	Copy Paste Reset Values	Non-Default Values     Difference to Refere     Filter	Expand Highlighted Set Refer	Read Setup Settings     Global Settings	
History Table	View Starting Setup	Editing		Highlighting	Filtering	Other
M474-4DA646 0						d Þ
Read Setups						
Application Type				DM474-4DA646		1
Jndefined 🗾		Set	up 0 📃	Setup 1	Setup 2	
	4 Read Setup					
Application Steps	Name	Setup 10000000	0000000000000000000000	Setup 0	Setup 2	
🏄 Optimize Ima	Enabled	V		✓	✓	
Copullize Ind	Light and Imager Settings					
1	4 Trigger Settings					
6.6	Timeout [ms]	2 000		2.000	2 000	
Code Details	Imager Settings					
1	Automatic Exposure			. [	- F	
A Real	Maximum Exposure (μs)	200 000		5 000	200 000	
Application Details	Maximum Gain Factor	251,18		251,18	251,18	
Details	Exposure (μs)	2 000		3 489	2 000	
•	Gain Factor	2,32		5,37	2,32	
Format Data	Image Mirroring					
L 4	Flip Horizontal			E	<b>F</b>	
	Flip Vertical	Г		F	Γ.	
Inputs / Outpu	✓ Light Settings					
Communicatio	Light Settings					
1	External					
	Enabled	<b>v</b>		~	V	
Save Settings	External Intensity	15		15	15	
	Image Size (Region of Interest)					

Your reader can be configured for up to 16 different settings. In Single, Continuous, Self, and Burst trigger modes, you can enable multiple (or all) setups, and the DataMan reader goes through all of the configured imager combinations until there is a decoded image or there are no images left (that is, a NoRead Image).

You can change the parameters for the setups in the Read Setup pane's appropriate table cell.

Choose to start the read setup process with either a specific setup, or the Last Successful Decode.

The currently selected setup also gets represented in other panes. For example, you can check and change the active Read Setup in the Settings ribbon bar:

Home Action	s Setting	s Syste	m Vi	iew Read	Setups									Q & A	Help	
Back Forward		Fest Mode Settings	Read Setups	Application Details	Symbology Settings	Quality	Data Formatting	Buffering and Transfer	Communication Settings	System Settings	Multi-Reader Sync	Table View	Setup 0 + Setup 0 Setup 1 Active Read Setup			
28A			<b>д</b> >	C DM473-	3D7E9E 🔘										4	Þ

### **Data Validation**

**Data Validation** is used to confirm that the data encoded by a symbol is in the correct format for a particular company, industry or international standard.

🎬 👎 💻 🕘 📕 DataMan SetupTool - DM474	4DA646 [10.86.80.35]	
Home Actions Settings System View		Q&A Help 🔨
Image         Image <th< td=""><td>ng and Communication System Table Setup 0 - Strings View Active Read Set_</td><td></td></th<>	ng and Communication System Table Setup 0 - Strings View Active Read Set_	
DM474-4DA646 0	K Result History	$_{^{a}}$ $\times$
Data Validation	📉 🔀 Clear 🛄 📄 🗿 🛄 👻 🌳 🖛 🖾 Logging 👻	
	Result Result Status	
Application Type Data Matrix QR Code / MaxiCode / Aztec Code 1D / Stacked / Postal Undefined		
Undefined   None	-	
Application Steps		
Optimize Ima		
GS1 Validation		
Match String Validation		
Code Details		
Application Details	_	
Validation Failure Action	-	
Format Data		
Pormat Data		
inputs / Outpu		
Communicatio		
ins Communicatio		
•		
Save Settings		
<	>	
	Data Matrix 16x36 9.5p	

Data Matrix, QR Code/MaxiCode/Aztec Code and 1D/Stacked/Postal code categories can be validated against standards/well formedness.

# **Code Quality**

Under **Code Quality** you can set the desired code quality standard you want to use for quality assessment for your code type. Once you set this on the **General** tab, you can navigate to the appropriate code quality standard's sub-tab under the **1D Barcodes** or **2D Codes** tabs and customize for specific grades the grading thresholds, including specific grades in the overall grade and their display in the report.

**(i)** Note: MicroQR is not supported for code quality grading.

🎬   ۶ 💻 🕘 🗯	DataMan SetupTool - DM474-4DA646 [10.86.80.35]	
Home Actions Setting	js System View	Q&A Help 🔺
Back Forward     History	Image: Setup       Image: Setup <td< th=""><th></th></td<>	
DM474-4DA646 0		4 ▷ ×
Code Quality		
Application Type Undefined	General       2D Codes       1D Barcodes       Result String <ul> <li>General</li> <li>Append Code Quality Data to Result String</li> <li>Output Overall Grade</li> </ul> Prefix For Data <ul> <li>Reported Data</li> <li>Name</li> <li>Reported Data</li> <li>Name</li> <li>Grade</li> <li>Value</li> <li>Grade</li> <li>Value</li> <li>Grade + Value</li> <li>Separator For Data Elements</li> <li>Separator For Tor Data Elements</li> <li>Separator Ferve PCM Values</li> <li>Code Quality Report Custom Description</li> </ul> <ul> <li>Code Quality Report Custom Description</li> <li>Image: Code Quality Report Custom Description</li> <li>Image: Code Quality Report Custom Description</li> </ul>	
	Data Matrix 16x36 9.5p	

After you set up your device to compute ISO/IEC 15415, AIM-DPM/ISO/IEC TR29158, SEMI T10, or DotCode for 2D Codes under the General tab in the Code Quality pane, the 2D Codes, 1D Barcodes tabs allow you to manage aspects of those types of code grading.

In the **Result String** tab, check **Append Code Quality Data to Result String** to enable token based data formatting and allow code quality result data to be appended to result strings. If checked, **Output Overall Grade** outputs the overall code quality grade (which is defined as the minimum grade of selected metrics) in the result string.

The Report FTP Transfer tab allows you to set up code quality results to be sent via FTP in the form of an HTML report.

#### **Buffering and Transfer**

**Buffering and Transfer** lets you control what images are recorded and saved on the reader, it lets you view images that are saved on the reader, and it lets you transfer those images to your PC.

- The Image Buffering tab lets you control what images to save to the reader.
- The Image PC Transfer tab lets you control how images are transferred from the reader to your PC.
- The Image FTP Transfer tab lets you set up automatic image transfers from the reader to your PC.
- The **Result FTP Transfer tab** lets you to configure the reader with the IP address and port number necessary to send decode results to an FTP server.

#### Configuring the DataMan Device

Actions Settings Syst	em View			Q&A Help
) 🔿 🖡 🖻		🛋 👩 🛄 🚱 📕	Upload Image	
ck Forward Trigger Input Line 1	Input Line 2 Input Line 3 Live Op	timize Optimize Tune Train Enable Test Switch to Proces	s 🏨 Train Image	
Action	Action Action Brig	htness Focus Code Mode Monitor	-	
History	rigger	Actions	Images	
DM475-622582 (3)			d b ★ Image Panel	₽ ж
			🗩 🔎 👰 🚸 Reset ROI 😽 🗸 🌌	Quarter + JPEG + 🍟
Buffering and Transf	er		The reader is configured to multico	
Application Type	Image Buffering Image PC Trans	er Image FTP Transfer Result FTP Transfer	<ul> <li>Interester is congress of management without partial results. Single code To resolve this go to Code Details.</li> </ul>	s may not read. Allow Fartial
Undefined 👻	- Buffering Settings		of Codes to 1 or allow partial result	sing set number intesting
Application Steps	What Results to Buffer	All		
	What Images to Buffer for a	Same as result		
📩 Optimize Image	Result	L		
	Images per Result Limit	0		
•	Image Buffer Maximum Size	6		
Code Details	Available for Setup Tool / DMCC	12 -		_
1	Auto Prefer Region Center			Surger and State
	- NoRead Image Mode NoRead Image Mode	NoRead Image Period		NAME AND A REAL PROPERTY AND A
Application Details				ALCONFICT ALCONFIC
•	NoRead Image Period			
r_ 1	NoRead Image Number	1 🚓		NUMBER OF STREET
Format Data	no read last image number	2		
+	NoRead Image Rate	1 - I Second		
	NoRead Image Rate Burst	1		
Inputs / Outputs	Good Read Image Mode	Unlimited		
+	Good Read Image Mode			
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Communications	Good Read Image Rate Burst	1	10066541400641 Come 128, 739 FPM	
+	Buffer State Number of Buffered Images	0		
Carlo Catting	Allow Buffer Overwrite			
Save Settings	Delete After Transfer	Clear		
	Buffered Image Settings	Joan		
	Size	Full		
	Format	Bitmap		
	24 Mar 10		Exposure (µs) 💌 😑	
	Quality	· · · · · · · · · · · · · · · · · · ·	Gain Factor	÷ 2.32
		Lowest (fast display) Highest (slow display)	Focus 💽 🗁 🖓 🕂	6.18 Diopter
	Overlay Graphics			105 mm
			Image Panel 🔕 Code Quality 🕲	4 Þ ×
	)x0D><0x0A>5999075205937,B36,A		Untra	

(i) Note: The Buffering and Transfer function does not perform any decoding.

# System

The **System** tab enables you to save and open configuration settings related to the device your Setup Tool is connected to. In addition, you can export parameters or save configuration in human readable form (a .txt file).

8 / 5		0				Dat	aMan Setup Tool - DM473	-3D7E9E[10.86.80.1	3]			-	•	23
Home	Action	is Settings	System View								(	A&A	Help	~
📀 Back	) Forward	System Device Info Log	Configuration Backup Settings	Save Configuration	Open Configuration	Save Settings	<ul> <li>Reset Configuration •</li> <li>Update Firmware</li> <li>Upload Feature Key</li> </ul>	Print Device Backup Code	Print Configuration Code	All     Non-Default Only	Configuration			
H	istory					Configuration				Export Parameters	Human Readable Configuration	n		

Click Configuration Backup Settings to define the way you save your configuration.

🖀   🗲 💻 🔒 🔕	DataMan Setup Tool - DM473-3D7E9E [10.86.80.13]	_ 0 %
Home Actions Settings S	System View	Q&A Help 🗸
DM473-3D7E9E 🔕		4 ⊳ ×
Configuration Backu	p Settings	
Application Type	Automatic Backup	
Undefined 💌	Backup File Settings	
Application Steps	Server Address : 21 -	
Optimize Image	Password	
+	Server Type FTP Generic	
Code Details	⊂ SD Card Backup Settings	
+		
Application Details		
+		
Format Data		
+		
Inputs / Outputs		
+		
Communications		
+		
Save Settings		
	Untrained	

Automatic Backup works with devices connected through Ethernet. When enabled, this function does a device configuration backup to an external storage (an FTP server) every time the configuration is saved to flash. Restore can be done manually by either the Setup Tool or DMCC commands. For devices equipped with an SD Card, check **Use SD Card for Backup** to save your configuration there.

Configure the reader with the IP address and port number necessary to specify where you want to save the configuration. You can also set a username and password combination.

# View

The **View** tab helps you to display different views related to the data you want to check. The following options are available:



Displays the Image Viewer window.



Image Panel Displays the Image Panel toolview where you can view the images read by the device.

54



Displays the Result History toolview in which you can view and log read results.

History

Displays the Code Quality toolview where you can do and view the necessary code quality settings.



Displays the **Q & A** pane in which you can see questions and answers related to the options appearing on the open document.



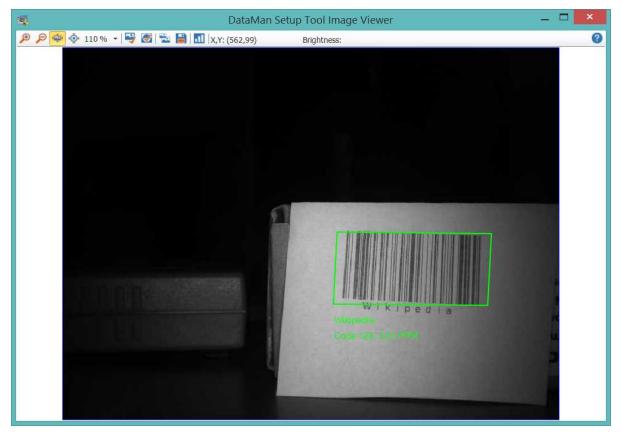
Clicking the downward arrow belonging to this option, you can select the layout in which you want to display the panes you selected.



Clicking **Syncronized Navigation** makes the same navigation steps you made occur in all open device documents.

# **Image Viewer**

To open the Image viewer, connect to a reader and in the upper toolbar, click the **View** tab. There, click the **Image Viewer** button. The **Image Viewer** window pops up:



In this window, you can view the image read by your reader. The image is zoomable, it can be copied to the clipboard or saved to a selected folder. You can also check the histogram of the read image and the brightness data of a selected point in the image. Use the buttons on the toolbar ribbon of this window to carry out these tasks.

Because of multi-reader support, several device document tabs can be open at a time, which means that there can be multiple image sources at the same time. The **Image Viewer** receives image data only from the active device document. If the active document cannot provide image data (for example, it is a <u>Reader Group Editor</u>), the content of the **Image Viewer** window will be empty.

### Image Panel

You can view the read image on the right hand side of the window: the **Image Panel** is always displayed by default. On the **View** tab you can switch on and off by clicking the icon. This window can also be docked in different places of the application.

🎬   🖡 🖳 👹 📓		DataMan SetupTool	- DM474-4DA646 [10.86.80.35]	. • S
Home Actions Settings	System View			Q&A Help 😽
DM474-4DA646 0			4 Þ 🗙	Image Panel 😐 🕺
Optimize Image				🔎 🏳 🚭 🗄 Reset ROI 🔫 🛛 🖉 Quarter 🕞 🍟
Application Type Bas Undefined  Application Steps Optimize Ima.		10		
Code Details	Tune	9 8 7		
Format Data	Test 🔻	6		
Communicatio	HDR	3 		
Save Settings	High Frequency Ligh	1 0 <u>55</u> <u>50</u> 45 <u>40</u> 35 <u>30</u> urrent Read Rate	25 20 15 10 5 0	Exposure (µs) 🕷 👌 🖂 🔶 🕹 2000 µs
(Arrest)	Aimer Enabled I External F	xcode Time [ms] n/Max Decode und Symbologi ad Strinas	Untraine	Gain Factor C C C C C C C C C C C C C C C C C C C

You have the option to zoom in and out of the image. In addition, log NoRead and decoded images to the file system from this pane using the **Logging** options. Click the More Buttons drop-down arrow on the far right side of the **Image Panel**:

arter 👻	JPEG	+	1	•	- Logging -
Lo	g all NoR	ead in	ages	to file	e system
Lo	g all deco	dedi	mages	s to fil	e system
Lo	gging and reporting settings				

Clicking the last option here opens the <u>Setup Tool Options</u> window, in which you can set the default folder where logs of NoRead and decoded images are to be saved.

#### **Results Viewer**

Similarly to the **Image Panel**, the **Result History** window can be configured in different layouts. The **Result History** window is displayed by default, but in case you have closed it, you can have it displayed again by clicking **View** and then clicking the **Result History** icon.

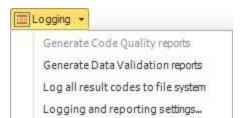
The result data comes from the active document.



You can customize the layout of this pane using the available options, that is, you can choose what data should be shown in the columns of the table.



Select what you want to log from the Logging drop-down list:



Clicking the last option here opens **Options**, in which you can set the default folder where reports and the logs of result codes are to be saved.

# **Compare Configuration**

Use the Compare Configuration page to set, copy, compare, or restore device configurations and settings. You can use multiple devices to quickly synchronize configurations or check for inconsistencies. Select multiple devices from the device list and click the **Compare Configuration** button to initiate the comparison in a new document.

The table view lists all settings of the selected devices, while the menu on top allows you to take a number of actions relating to these settings.

第15回目の		DataMan Si	tup Tool				- 0 %
Home Compare View							Q&A Help
		Non-Default Values					
💽 📄 🙀 💥 💆 Save Settings 🔹			<ul> <li>Read Setup Settings</li> <li>Global Settings</li> </ul>	° 📩 📥 🚍			
Add Device Add Config Remove Reset Configuration *	Conv Paste Res	et Expand Highlighted Set Reference Read	All Settings	Expand Collapse Reset			
File. Device	Valu	es Rows Only Setup	Contra domingo	All All Layout			
Device	Editing	Highlighting	Filtering	Other			
Compare Configurations 1 (2)					d b ×	( Image Panel	4 ×
		DM473-3D7E9E	1	DM474-586364	^		
		Glabal Settings / Setup 0	())	Global Settings / Setup 0			
✓ Read Setup							
Name		Setup 0	Setup 0				
Enabled							
4 System Info		-					
Device		DM473	DM474				
Serial number		1A1712XN014392	1A1811PP14666	6			
Device name		DM473-3D7E9E	DM474-586364				
MAC address		00-D0-24-3D-7E-9E	00-D0-24-58-63-	64		Image Panel 🔘 Code Quality 🔘	4 Þ 🗙
Firmware version		6.1.3_sr1	6.1.3_sr1			Result History	<b>4</b> ×
Bootloader version		2016.09-95-g5c5219d	2017.11-45-g87f	355f		Result History	4 X
OS Version		6.1.3_sr1	6.1.3_sr1				
Installed hardware		Liquid Lens	Liquid Lens				
Feature keys		Verification, IDMax, ImageDownload, ImageSecurity, IDQuick, BarCode, Po		ownload, IDQuick, BarCode, PostalCode, 2DCode, V	alidation,		
▶ Optimize Image							
- Test Mode Settings							
Test Mode							
Automatic Triggering Enabled							
Trigger On [µs]		1 900 000	100 000				
Trigger Off [us]		100 000	100 000				
Enable Inputs							
Enable Outputs							
Number of Triggers to be Accepted		1	T				
Light and Imager Settings							
4 Symbology Settings							
> General							
Multicode		-					
Training							
4 Data Validation							
Data Matrix							
QR Code / MaxiCode / Aztec Code		-					
DotCode		-					
1D/Stacked/Postal							
> OCR							
QR Code / MaxiCode		-					
> Code Quality							
Data Formatting							
<ul> <li>Scripting</li> </ul>							
Scriping     Buffering and Transfer							
Communication Settings							
Communication Settings     System Settings							
System Settings     Configuration Backup Settings							
P Configuration Backup Settings							
					*		

For more detailed information on **Compare Configuration** features, see the **Q & A** of the page that can be opened from the top right corner.

# **Process Monitor**

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As it operates, a DataMan device logs statistics such as the number of triggers received, the number of symbols read (and not read), and the number of trigger overruns.

You can choose to have a separate Process Monitor document for each device, or you can have a single Process Monitor document for every device you want to monitor. If you want to have one Process Monitor document for each of your devices, select your device and then click the **Process Monitor** button and repeat this process for every device. If you want to monitor all of your devices on a single Process Monitor page, click the arrow on the **Process Monitor** button and click the **Add to Process Monitor** option that pops up.

If the **Process Monitor** button is disabled, it is because the device you selected does not support process monitoring or the device is open in this or another Setup Tool connection. After you connected to the Setup Tool, a DataMan device stops generating statistics about decode attempts by default. To re-enable process statistics when connected to the Setup Tool, you must manually start the Process Monitor. In the upper toolbar, click **Actions**, then click **Switch to Process Monitor**.

	3 4 5 6 7	
	Home Process Monitor View	
	Show Read Statistics     Select All     Image: Clear     Image: Clear     Image: Clear       Show Read Statistics     Image: Clear     Image: Clear     Image: Clear     Image: Clear	
	Display Cell Selection Layout Statistics Switch Mode	
2	Process Monitor	d ⊳ ×
	DM374-61EB8C	
	Total Triggers19Total Reads0% Read0.00%Total NoReads19% NoRead100.00%Passed Validations0Failed Validations0Buffer Overflow0Trigger Overrun0Item Count0	
	Process Monitor 🕲	d ⊳ ×
	DM474-123456	
1—	Total Triggers7Total Reads7% Read100.00%Total NoReads0% NoRead0.00%Passed Validations0Failed Validations0Buffer Overflow0Trigger Overrun0Item Count0	
	[3:24:26.087 PM] Data Matrix 14x14 23.0ppm	

:	Statistical data of one of the monitored devices	. Each device gets its own wind	ow (in this example).
---	--	---------------------------------	-----------------------

2	Process Monitor tab. Here only one tab is shown, but you can have multiple tabs.
3	Show Read Statistics: you can turn displaying statistical data on and off.
4	Cell Selection group: you can select multiple readers before doing mass actions.
5	Layout: reset the cell layout.
6	Clear Statistics: clear the read statistics in the selected panels any time during runtime.
7	Switch to Config Mode: switches to configuration mode

• Note: One device can be opened in only one Process Monitor document at a time. In the **Connect** page, the **Open** in **Documents** column shows which devices use the Process Monitor.

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