

## **OEM USB, RS232 Standard RS232 Single Cable OPOS Service Objects**



**Quick Reference Guide**

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NOTES

# Datalogic™

## OEM USB, RS232 Standard RS232 Single Cable OPOS Service Objects

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## Introduction

### Document Conventions

Formatting conventions are used throughout this guide to provide a consistent method for representing screen shots and command entries.



**Notes** contain additional information of interest to the user.



The **CAUTION** symbol advises you of actions that could damage equipment or property.

**Keystrokes.** Filenames, paths, field selections, and data or keystrokes entered by the user are shown in this **monospaced** typeface.

### About the Datalogic OPOS Service Objects

Service Objects are current to OPOS version 1.12, published in January 2007. They are fully compatible with the *Unified POS Retail Peripheral Architecture, version 1.12* and the OPOS appendix to that spec. To view the current version of the document, go online to the National Retail Federation at [www.nrf-arts.org/download](http://www.nrf-arts.org/download). The Service Objects support three types of DATALOGIC interfaces: RS232 Standard (also called Dual Cable), RS232 Single Cable, and OEM USB.

## Datalogic Products Supported

Device Type	Scanner			Scale		
	RS232 Std	RS232 SC	OEM USB	RS232 Std	RS232 SC	OEM USB
<b>Table Top Scanner/Scales</b>						
Magellan 2200VS	●	●	●			
Magellan 2300HS	●	●	●			
Magellan 8100	●	●	●	●	●	●
Magellan 8200	●	●	●	●	●	●
Magellan 8300	●	●	●	●	●	●
Magellan 8400	●	●	●	●	●	●
Magellan 8500	●	●	●	●	●	●
Magellan 9500	●	●	●	●	●	●
Magellan 1000i	●	●	●			
Magellan 1400i	●	●	●			
Duet	●		●			
VS800	●		●			
<b>Handheld Scanners</b>						
QS6000+	●		●			
QS2500	●		●			
QS6500	●		●			
QS6500BT	●		●			
QD23XX	●		●			
QD21XX	●		●			
QD23XX	●		●			
PD71XX	●		●			
GD41XX	●		●			

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# Installation

## Running the Install



**Uninstall any previous DATALOGIC or PSC OPOS scanner/scale service objects before proceeding with the installation of the DATALOGIC OPOS Service Objects.**

**DATALOGIC Service Objects are compatible with OPOS Common Control Objects version 1.12.000 included in this package.**

Installation can be performed in either of two ways: using a standard GUI installation, or as a silent install from the Command Prompt.

### GUI Installation

To install, please perform the following steps:

1. Download the most current install file for the DATALOGIC OPOS service objects from the Datalogic website ([www.datalogic.com](http://www.datalogic.com)).
2. Double-click **R96-xxxx.msi** to run the install program.
3. Follow the on-screen instructions to complete the installation.



**Version and date fields will be different depending on the version of the downloaded file.**

### Silent Install from Command Prompt

To perform a “silent install”, open a command window and **cd** to the directory containing the **R96-xxxx.msi** file. Type the following command to execute the install process:

```
> R96-xxxx.msi /quiet
```



**Silent Install mode does not install Common Control Objects.**

## Utilities

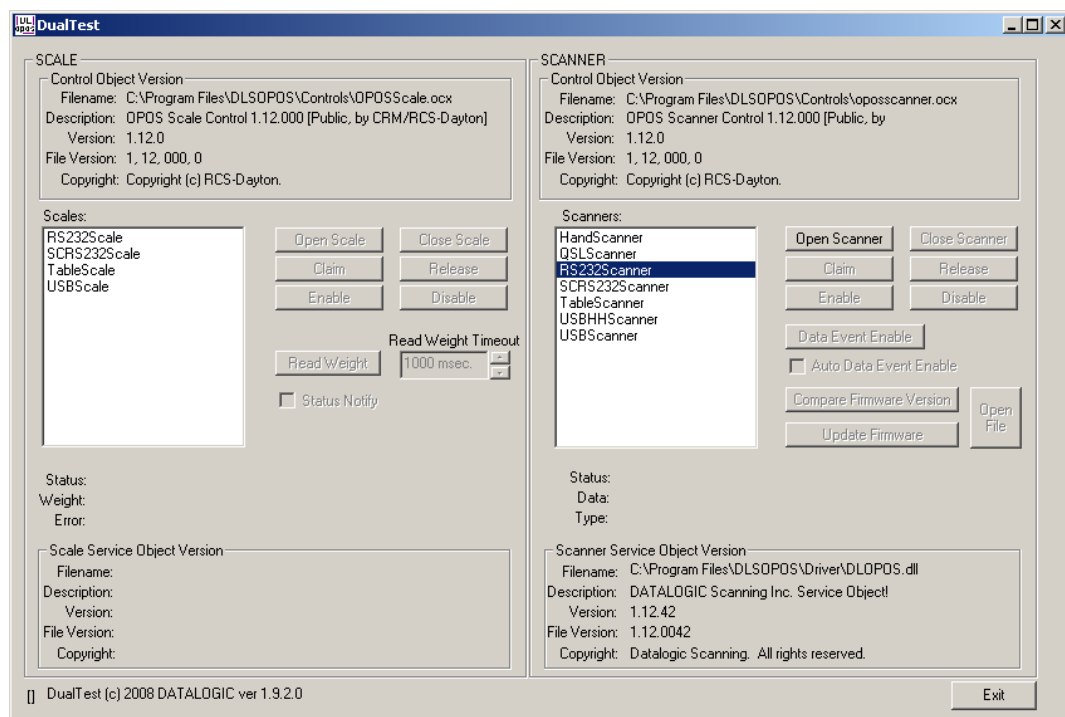
### DualTest Utility

The Datalogic 1.12 OPOS package contains a utility called DualTest that provides customers with the ability to quickly connect and test the operation of a Datalogic scanner/scale with the Datalogic service objects. Simple OPOS operations such as Open, Claim, Enable, Read Weights, bar code scanning, bar code type, Release, and Close can be exercised with this utility. DualTest is a fully operational OPOS application which exercises the connection and data path through the Common Controls and Service Objects to the physical device.

#### Scanner with DualTest

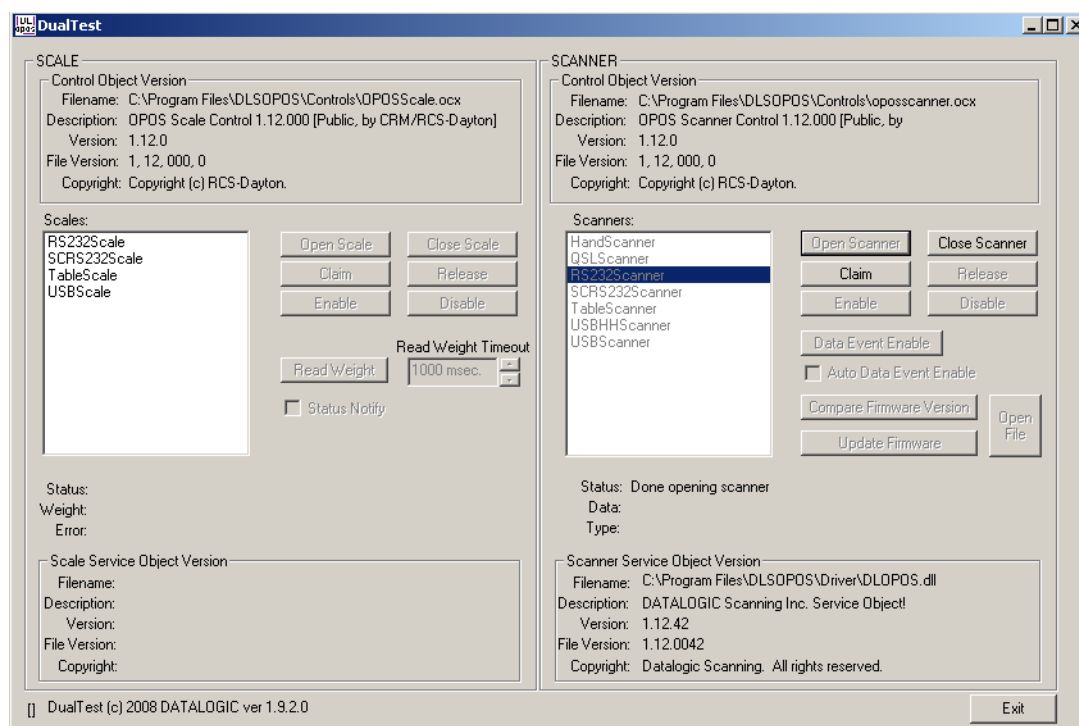
To connect to a Scanner, follow these steps after installing the 1.12 OPOS package from Datalogic:

1. Select device:

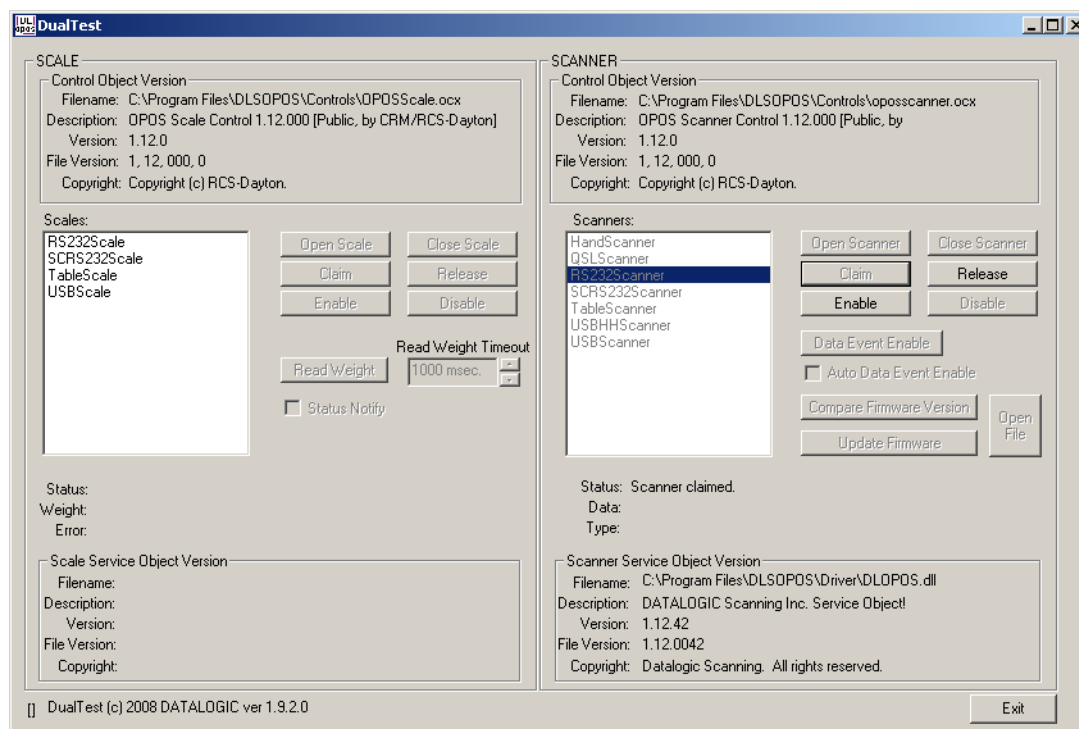




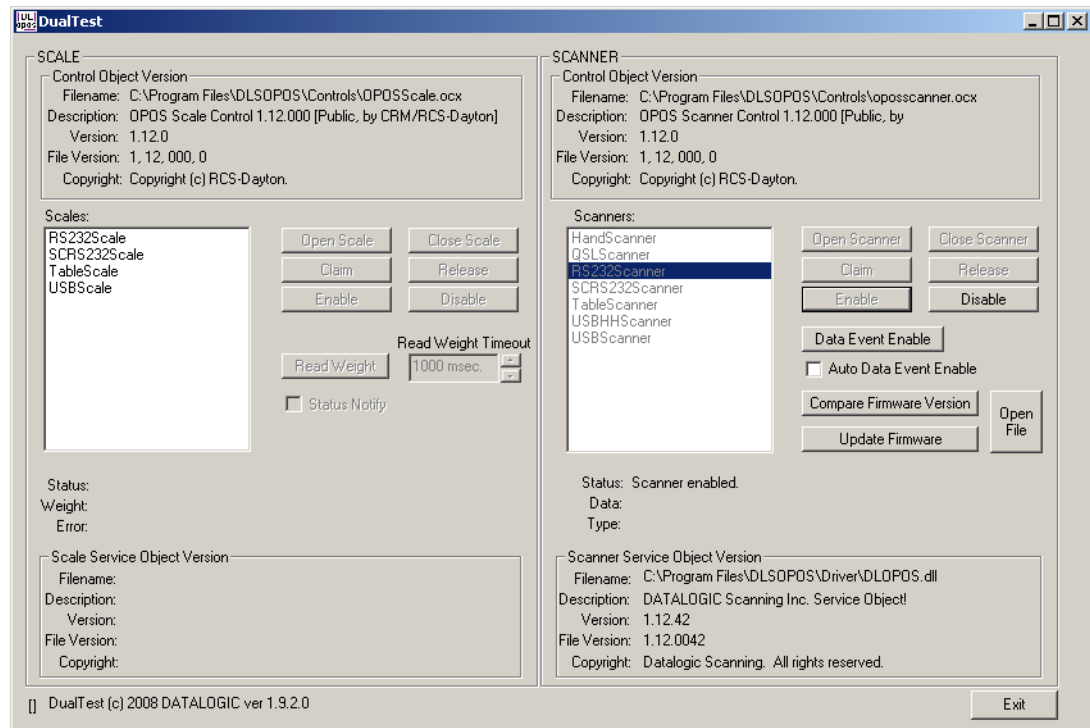
## 2. Open Scanner:



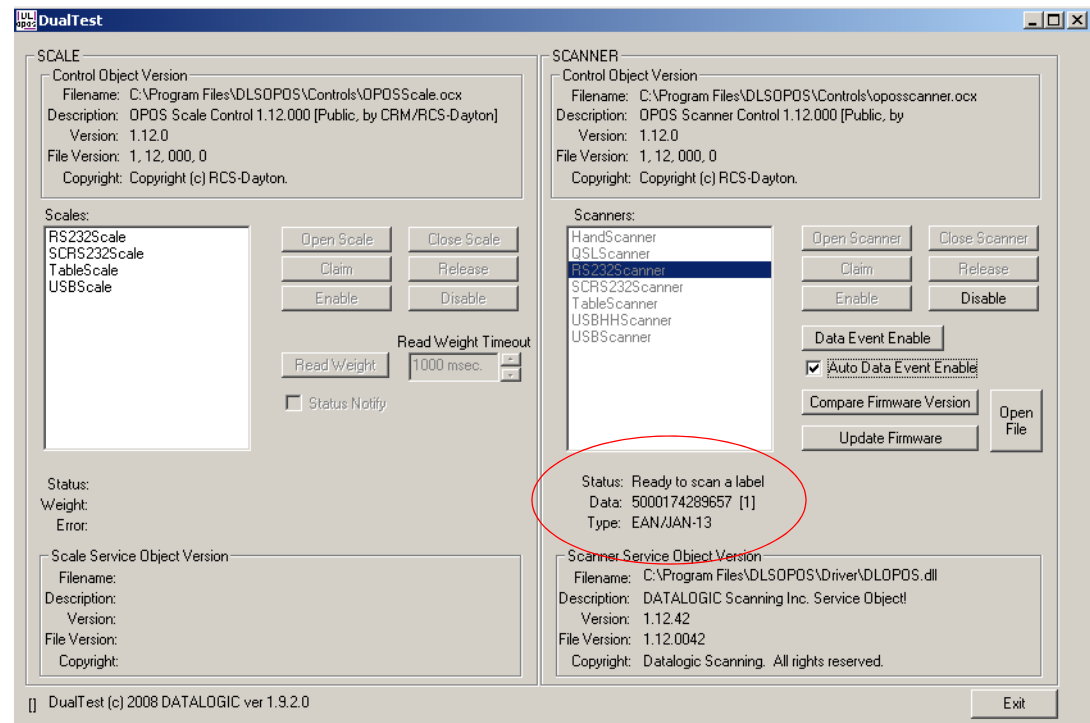
## 3. Claim:



## 4. Enable:



5. Now click the “**DataEventEnable**” button and check the “**AutoDataEventEnable**” box, and scan a bar code. The bar code data and type will be displayed as shown here:



## Firmware Update with DualTest

The Datalogic 1.12 OPOS Scanner Service Object supports the ability to update firmware on select scanners in accordance with the UPOS Specification (version 1.9 and above). The user's application may be written to take advantage of this capability in the service (see the UPOS specification for details). In addition, the DualTest application bundled with Datalogic's services supports this capability and may be used to upgrade firmware on select scanners. The following screen shots represent the steps used to upgrade firmware on a scanner that supports this ability using DualTest.



**CAUTION**

### IMPORTANT NOTE to OPOS programmers:

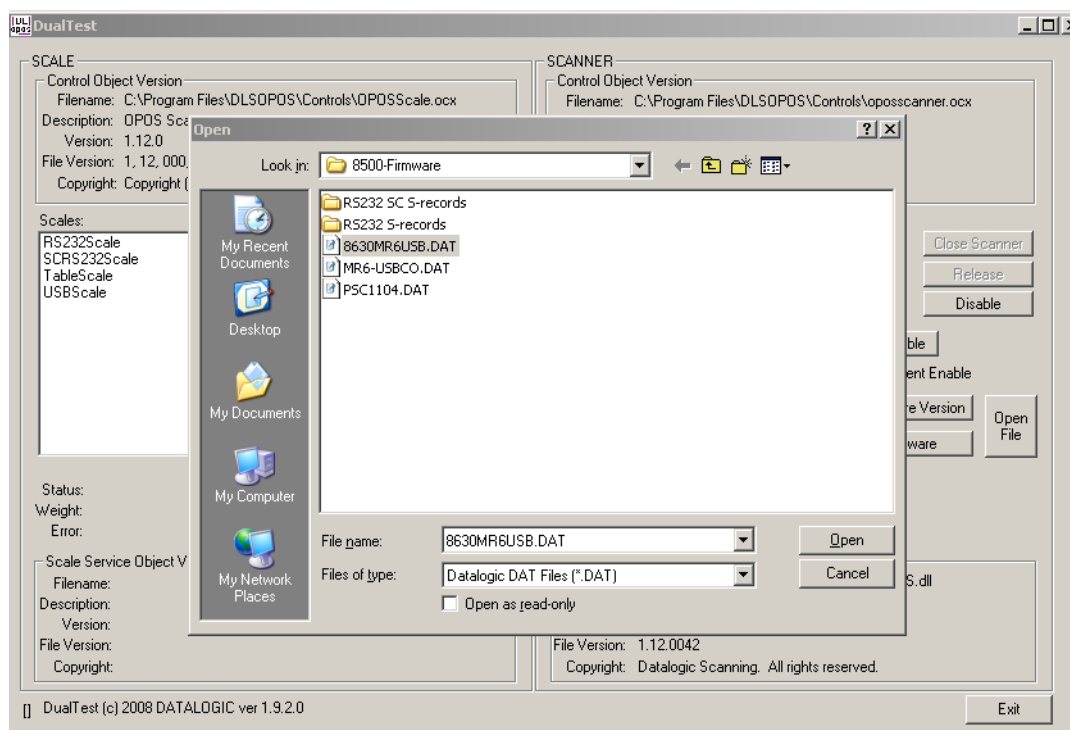
**Prior to performing a firmware update on a scanner, the Scale Service Object should be closed. Failure to follow this step could lead to firmware update failure and an inoperative scanner.**

To perform the firmware update, start DualTest and follow the steps in the previous section to Open and Claim the scanner. Then perform the following steps.

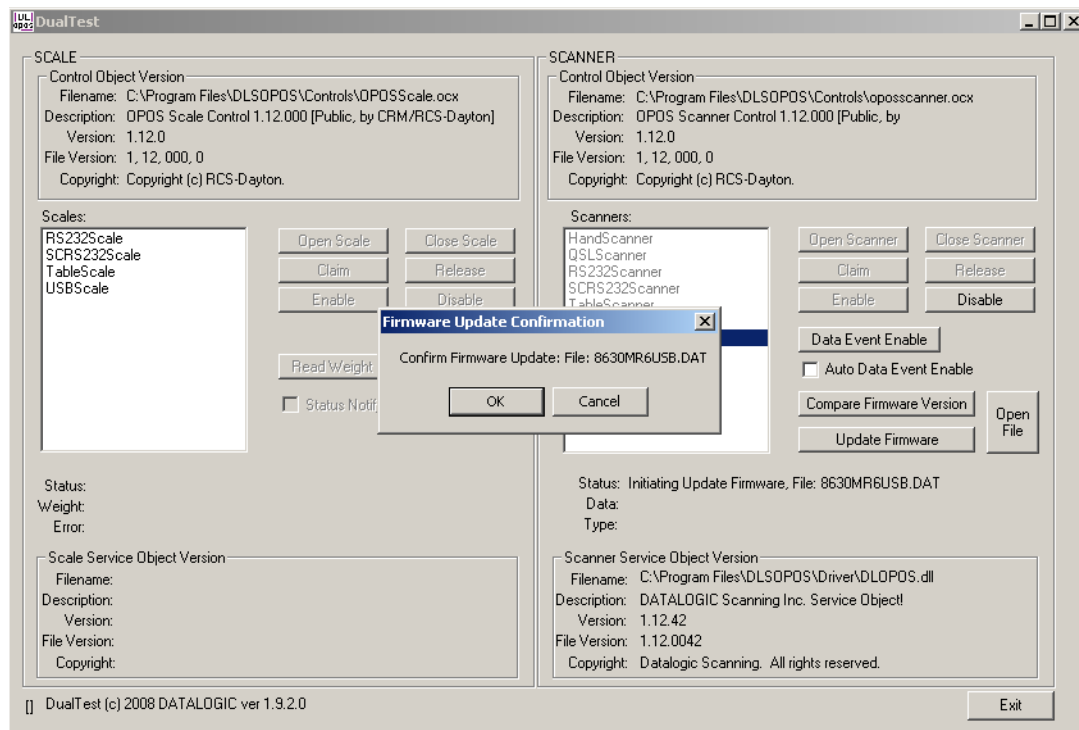
1. OpenFile: Locate the firmware file on your machine or network.



**Firmware files are interface and scanner specific and may be obtained from Datalogic Tech Support.**

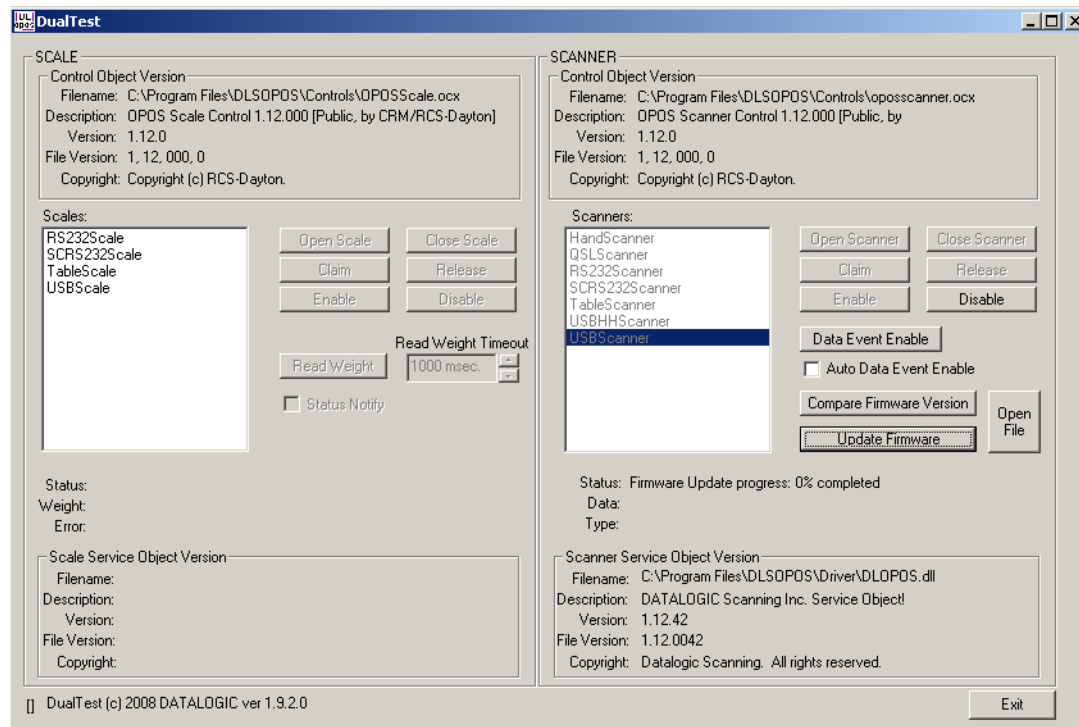


## 2. Confirm Update Firmware:

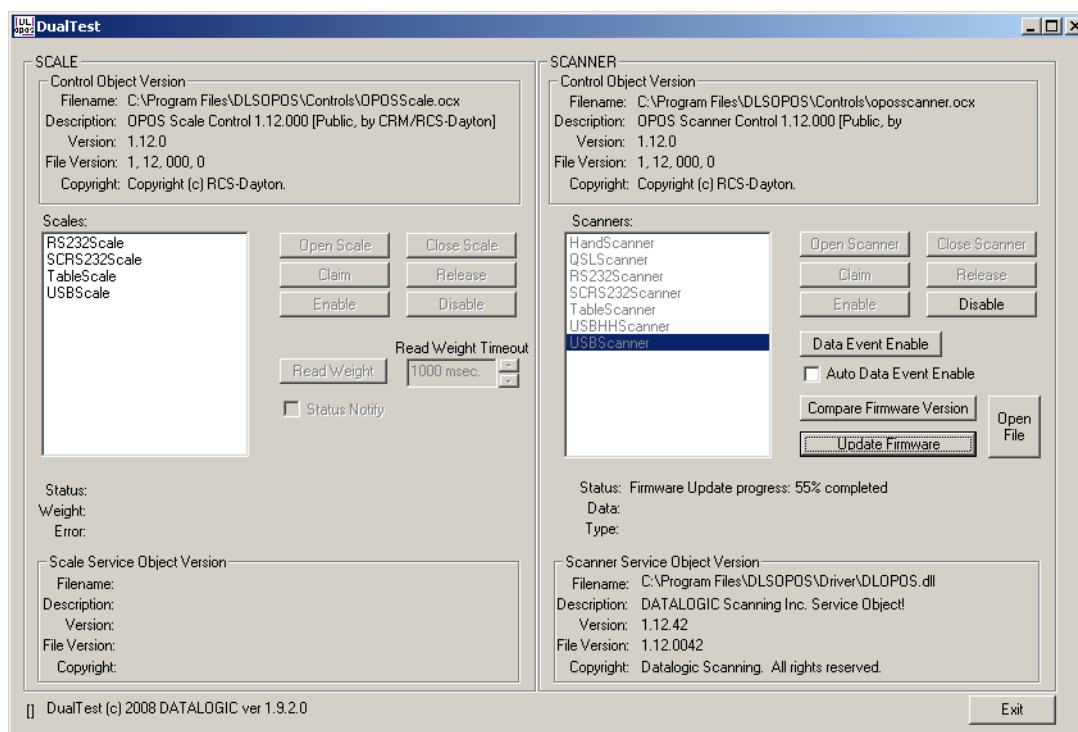


## Firmware Update Started

The Status field will update at every 1% of the upload. Depending on the scanner interface and parameters such as baud rate, the update may take from approximately 7 minutes to 40 minutes. DO NOT disconnect the interface cable or power cable from the scanner during the update!

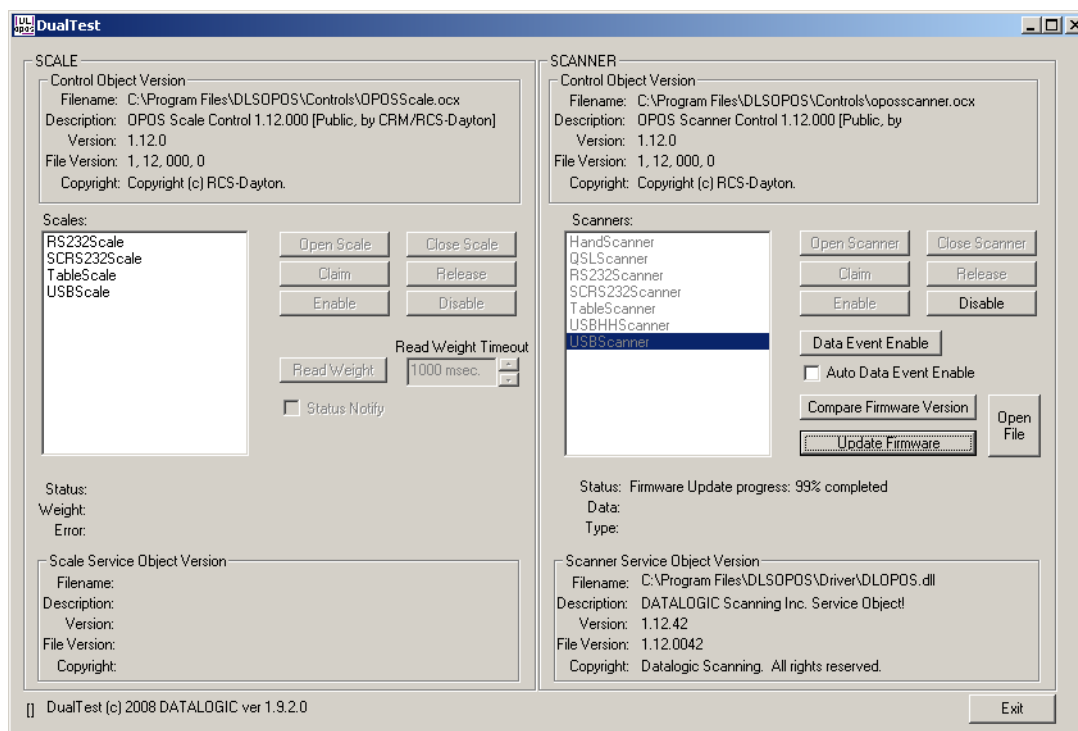


Update in progress, at 55% complete:

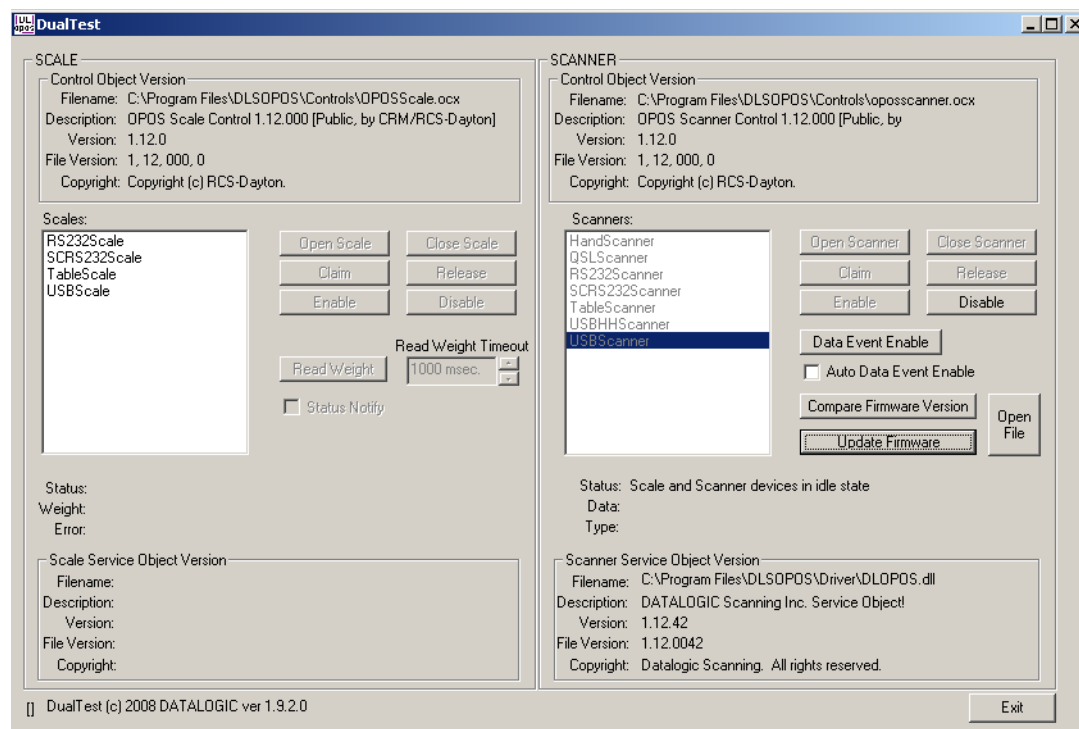


## Firmware Update Finished

NOTE that the service will stop at 99% complete until the scanner reboots and comes on line, which may take several seconds.



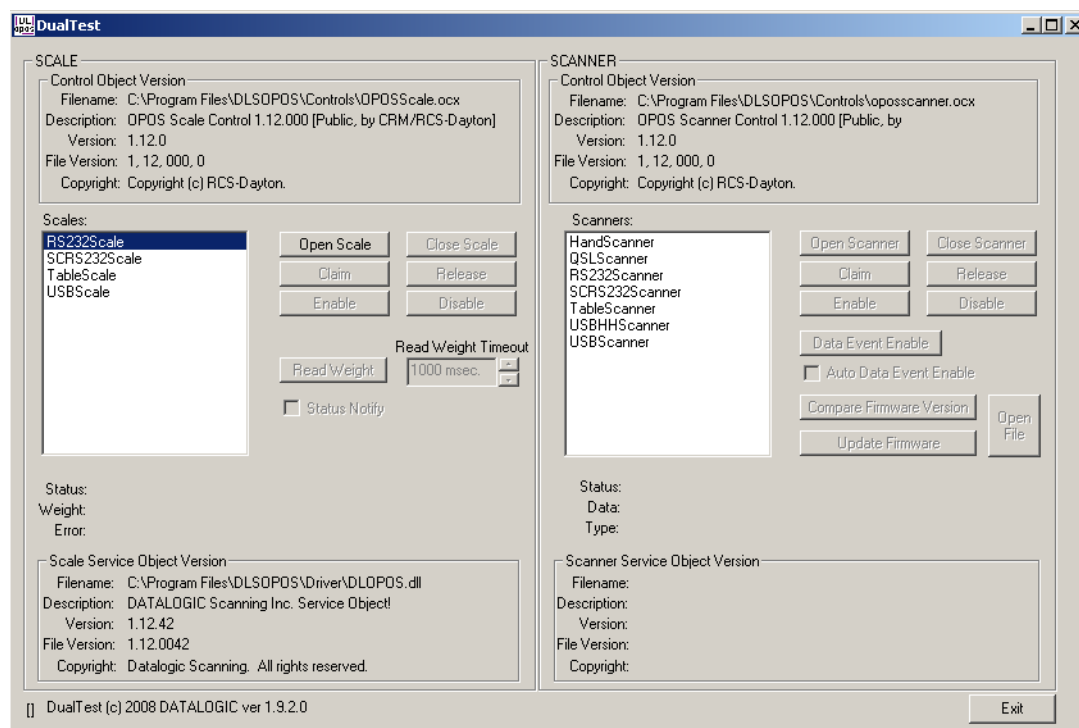
Finalized: The scanner is now back on line and fully operational.



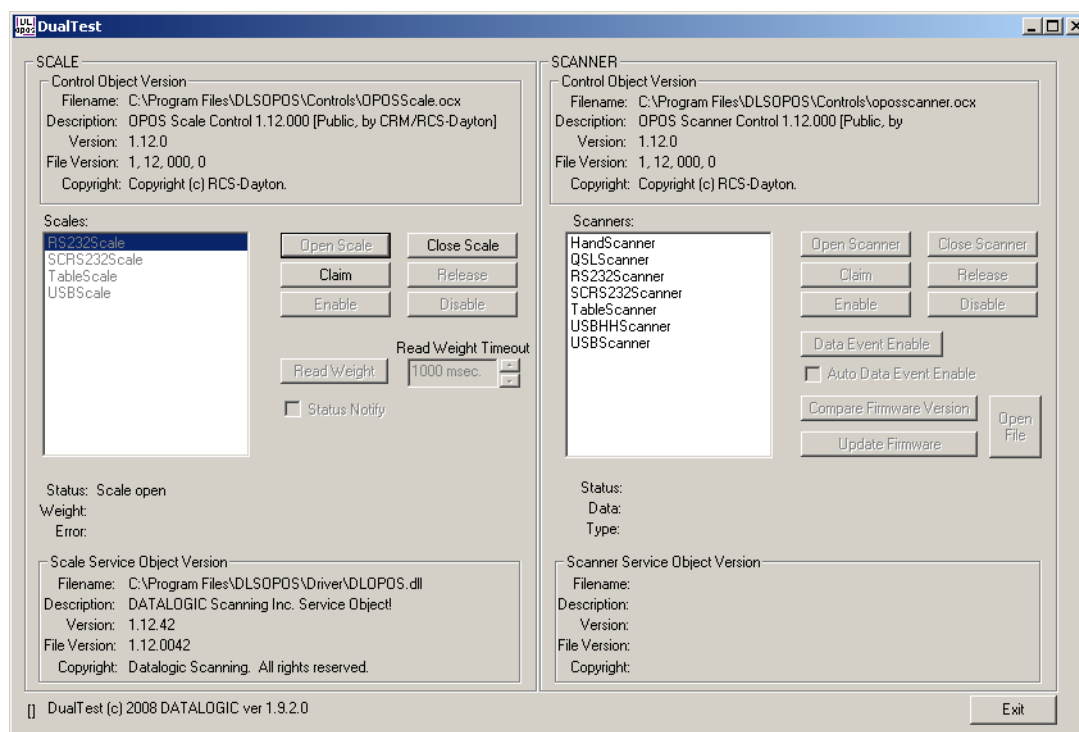
## Scale with DualTest

To connect to a Scale, follow these steps after installing the 1.12 OPOS package from Datalogic:

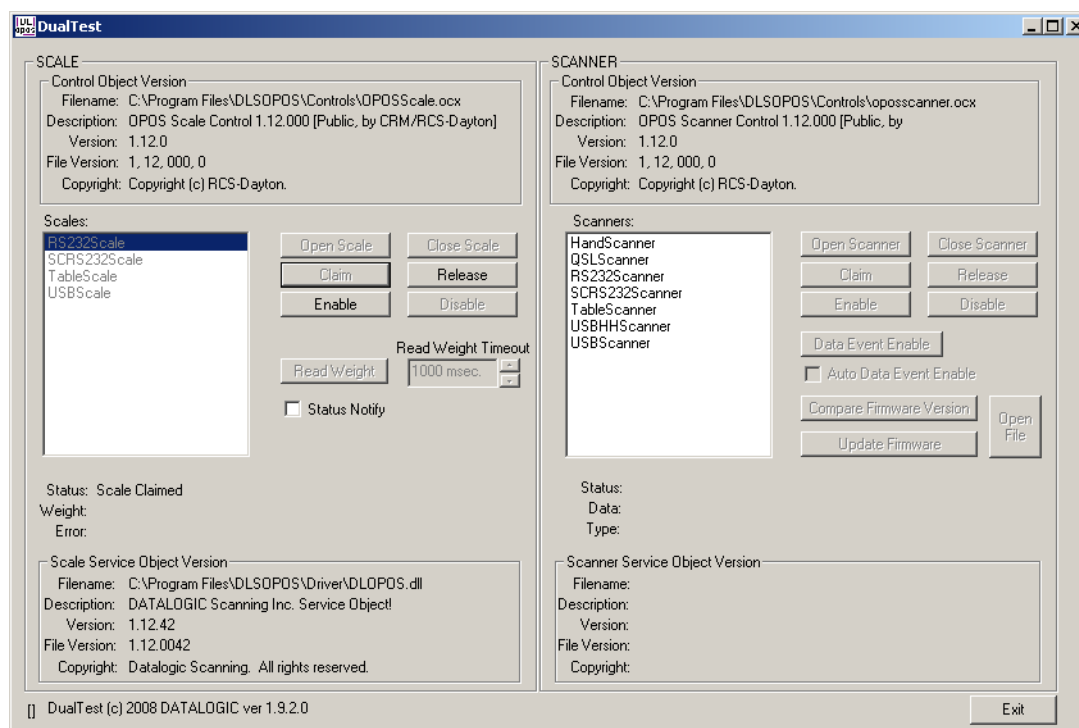
### 1. Select Device:



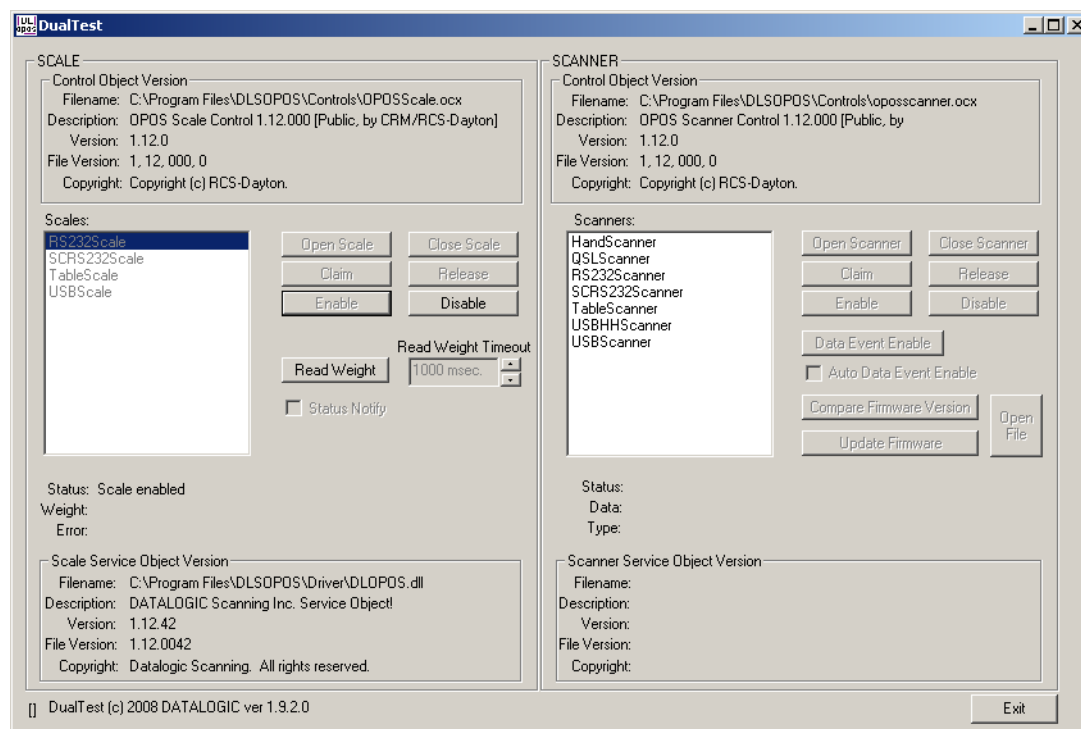
## 2. Open Scale:



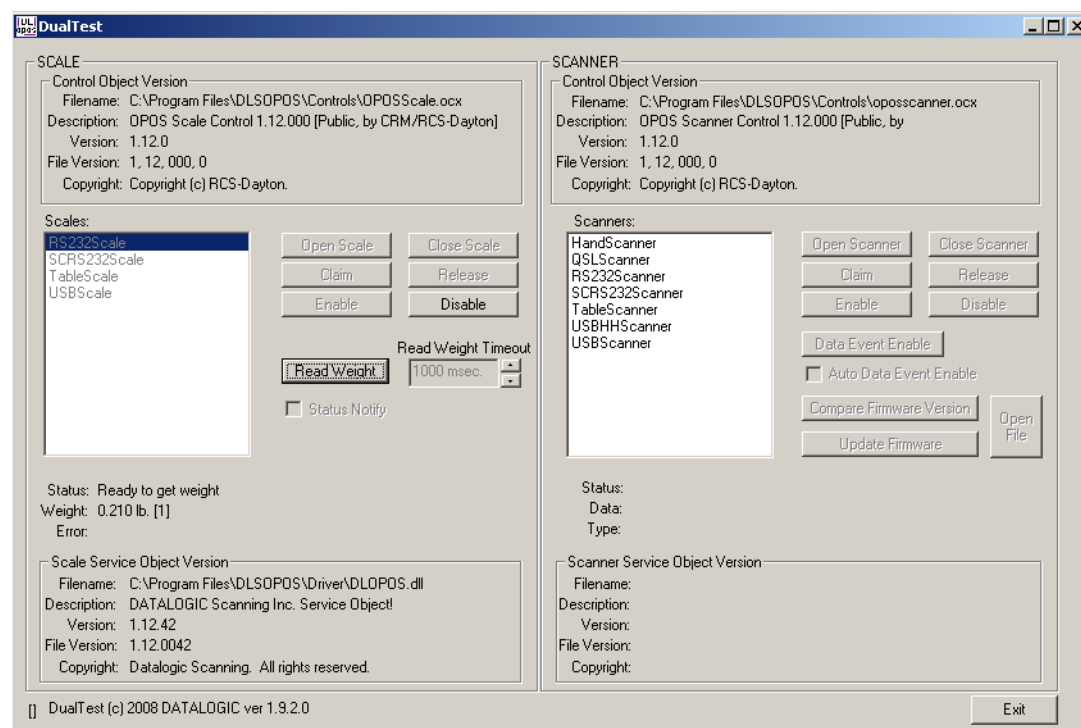
## 3. Claim:



## 4. Enable:



## 5. Read a weight:





## Live Weight Display

The Datalogic 1.12 OPOS Scale Service Object supports the ability to provide Live Weight Display functionality in accordance with the UPOS Specification (version 1.9 and above). The user's application may be written to take advantage of this capability in the service (see the UPOS specification for details). In addition, the DualTest application bundled with Datalogic's services supports this capability and may be used to demonstrate Live Weight Display function with a Datalogic scanner/scale. The following screen shots represent the steps used to activate Live Weight Display with a scale using DualTest.

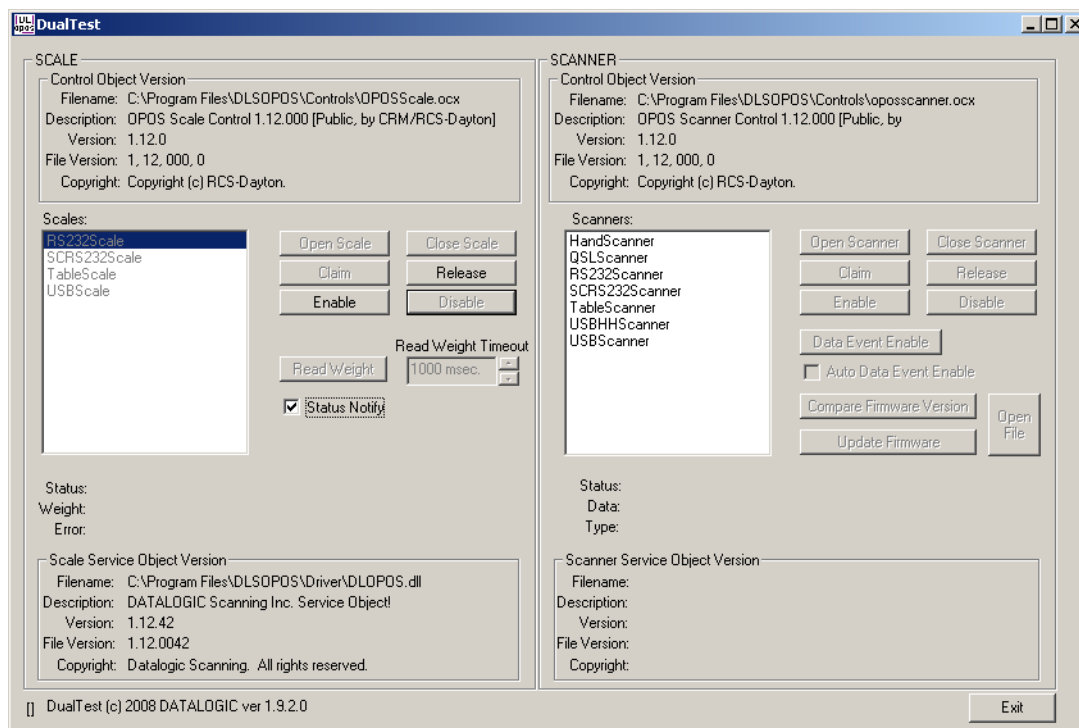


### IMPORTANT NOTE to OPOS Programmers:

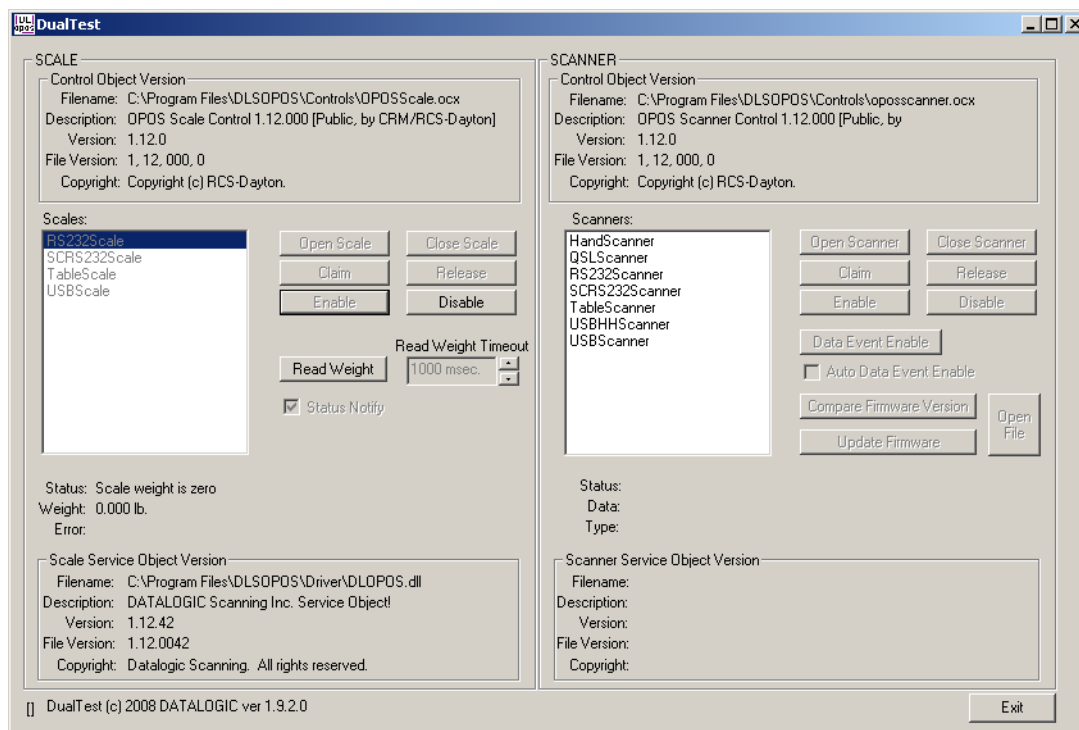
**PIDXscal\_StatusNotify must be set TRUE while the scale is NOT Enabled. As per the UPOS specification, setting PIDXscal\_StatusNotify TRUE after the scale has been Enabled will not activate the Live Weight Display function in the scale service object.**

To demonstrate Live Weight Display, start DualTest and follow the steps to Open and Claim the scale, as described in the previous section. Then perform the following steps:

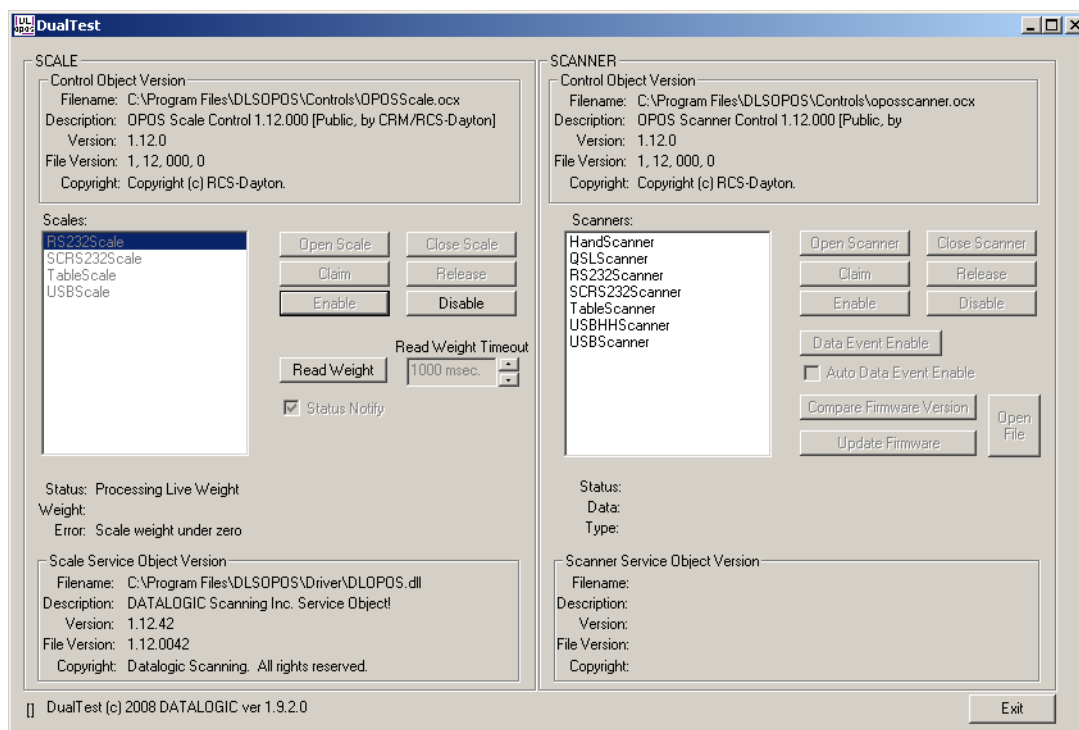
1. Set Status Notify True: Click the "Status Notify" check box.



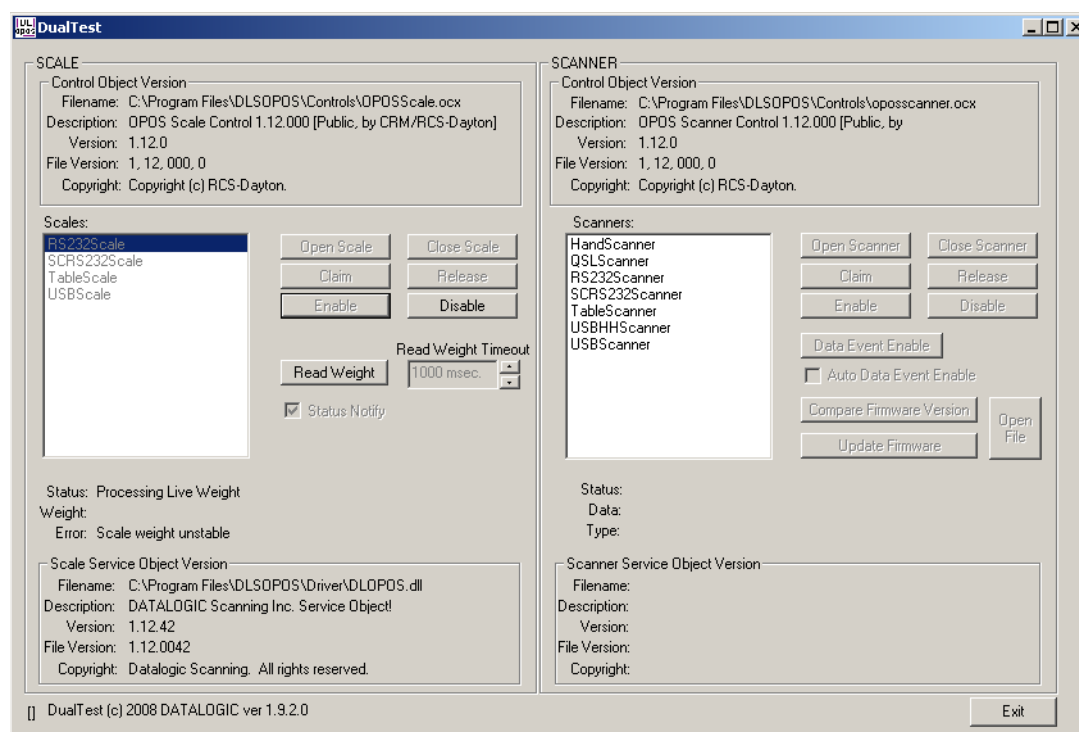
## 2. Enable: (Live Weight Begins immediately / Zero Weight)



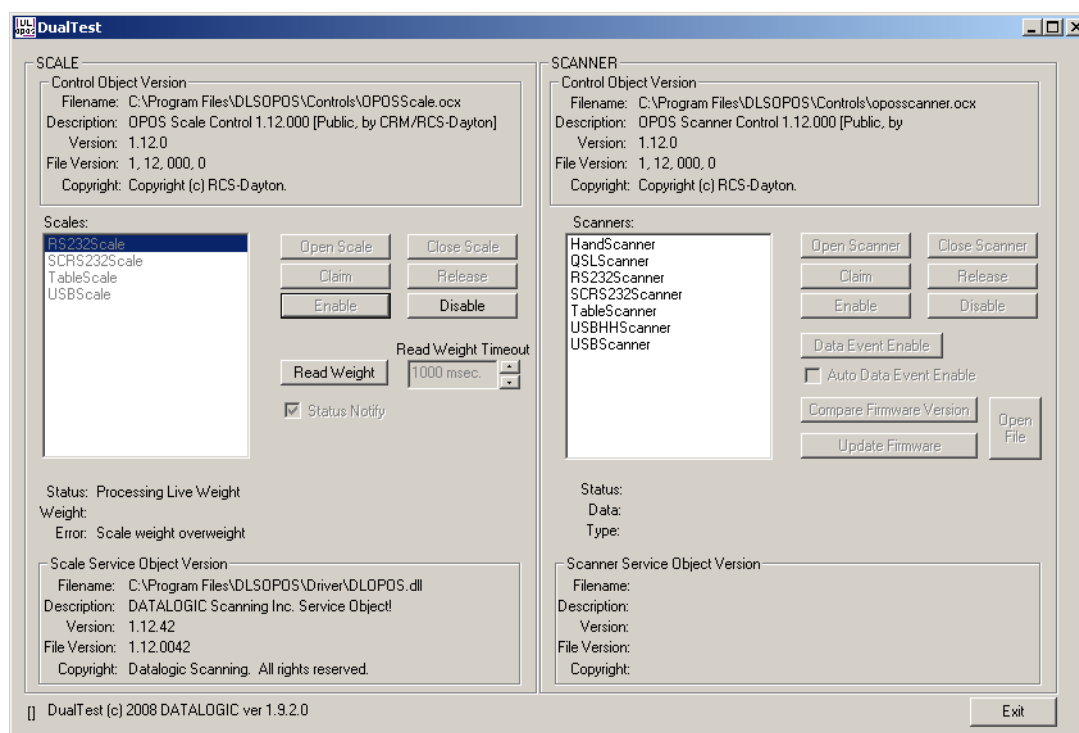
## 3. Underweight: An under zero condition has occurred.



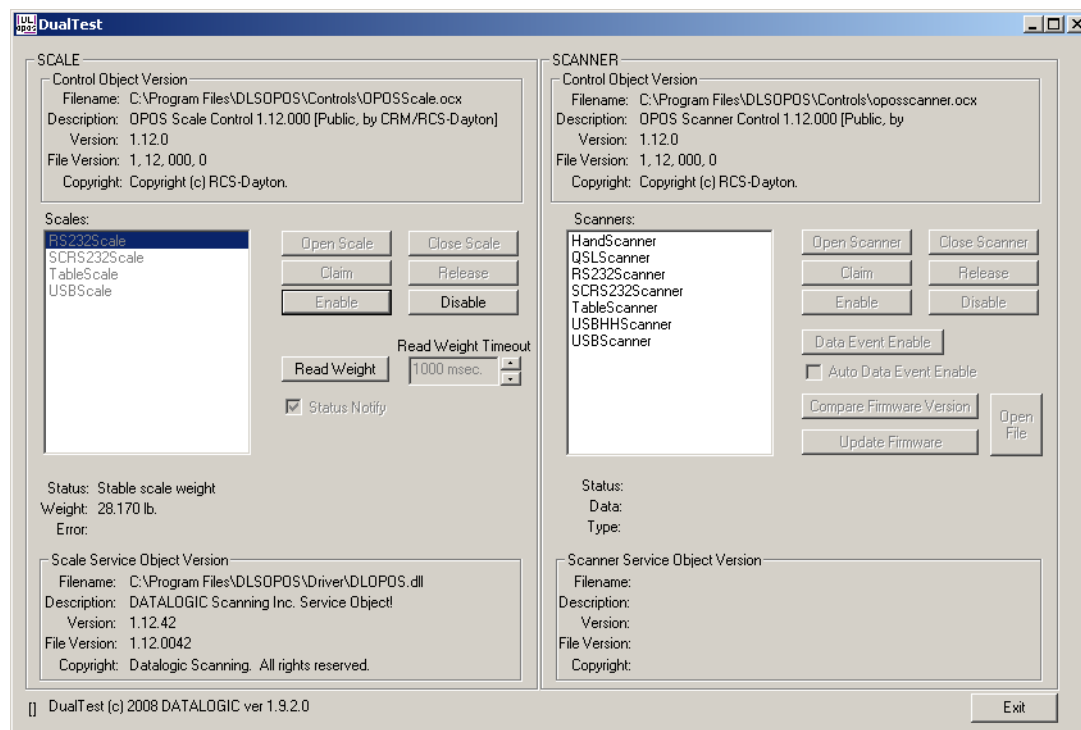
#### 4. In motion: The scale is in motion and has not stabilized.



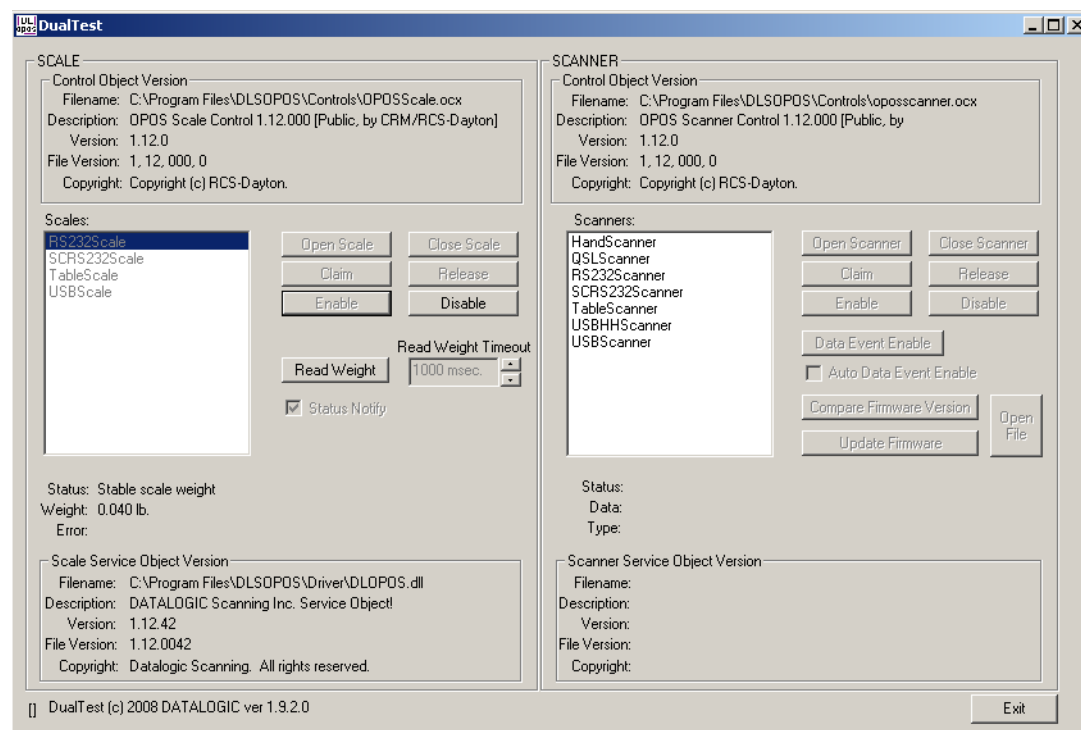
#### 5. Overweight: The scale's weight capacity has been exceeded.



## 6. Stable Large Weight:



## 7. Stable Small Weight:



## Developers Guide

OPOS service objects export a uniform interface; however there may be slight differences between the same types of devices from different vendors and models. Queries of OPOS properties reveal these differences. Below listed properties, methods, and events are DATALOGIC device specific return values. Other DATALOGIC service objects with different interfaces may produce slightly different results. Developers are advised to consider all error conditions in designing an application.

### Scanner Properties:

#### Common Properties:

##### AutoDisable:

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

##### BinaryConversion:

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

##### CapCompareFirmwareVersion:

Returns **TRUE** (also depends on the firmware and model of the scanner).

##### CapPowerReporting:

Returns **OPOS\_PR\_NONE**

##### CapStatisticsReporting:

Returns **TRUE** (also depends on the firmware and the model of the scanner).

##### CapUpdateFirmware:

Returns **TRUE** (also depends on the firmware and model of the scanner).

##### CapUpdateStatistics:

Returns **FALSE**.

##### CheckHealthText:

**Internal HCheck:** will return health string

**External HCheck:** not supported

**Interactive HCheck:** not supported

This property is empty before the first call to the **CheckHealth** method.

##### Claimed:

Returns **TRUE** after Claim method has been called. **FALSE** otherwise.

**DATALOGIC** devices are exclusive. It is recommended that a program keep the device **Claimed** as long as the application is running.

**DataCount:**

Returns the number of Data Events Queued.

**DataEventEnabled:**

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

**DeviceEnabled:**

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

**FreezeEvents:**

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

**OpenResult:**

Returns 0.

**PowerNotify:**

Returns **OPOS\_PN\_DISABLED** or **OPOS\_PN\_ENABLED**.

**PowerState:**

Returns **OPOS\_PS\_ONLINE**.

If the communication channel is having difficulties, an **OPOS\_E\_NOHARDWARE** will be returned on calls that send and receive data from the scanner.

**ResultCode:**

Returns result of last operation.

**ResultCodeExtended:**

Returns 0

**State:**

Returns

**OPOS\_S\_CLOSED**

**OPOS\_S\_IDLE**

**OPOS\_S\_ERROR**

**DeviceServiceDescription:**

Returns a descriptive string depending on the interface and device type.

**DeviceServiceVersion:**

Returns **101200XX**. where **XX** is the minor version.

**PhysicalDeviceDescription:**

Returns a descriptive string depending on the interface and device type.

**PhysicalDeviceName:**

Returns a descriptive string depending on the interface and device type.

---

## Device Specific Properties:

### **DecodeData:**

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

### **ScanData:**

Holds the raw scanned data received from the scanner.

**ScanData** property always has bar code data when a **DataEvent** is fired. For Tabletop scanners, the bar code data may be sent across the USB interface as uncompressed Binary Coded Decimal (BCD), depending upon scanner configuration and bar code type.

### **ScanDataLabel:**

Holds the scanned and decoded data from the scanner if **DecodeData** property is **TRUE**.

Contains data if **DecodeData** is **TRUE**.

### **ScanDataType:**

Returns scanned data type of the most recent label from the scanner.

Returned value is one of **SCAN\_SDT\_XXXX** constants, where **XXXX** is the type of the label. Refer to OPOS Scanner header file for the numerical values.

Contains label type if **DecodeData** is **TRUE**.

Label type as reported on scanner interface — the scanner assigns a label type identifier and sends this with the label data across the interface. The Service Object translates this into one of the OPOS defined label types.

## Scanner Methods:

### Common Methods:

#### Open:

Returns

```
OPOS_SUCCESS
OPOS_E_NOSERVICE
OPOS_E_NOEXIST
OPOS_E_ILLEGAL
```

#### Close:

Returns `OPOS_SUCCESS`

#### ClaimDevice:

Returns

```
OPOS_SUCCESS
OPOS_E_NOSERVICE
OPOS_E_ILLEGAL
OPOS_E_CLAIMED
```

This call will activate the communication with the device. **DATALOGIC** devices are exclusive. It is recommended that a program keep the device **Claimed** as long as the application is running.

#### CheckHealth:

`OPOS_CH_INTERNAL` is supported.

`OPOS_CH_EXTERNAL` is not supported.

`OPOS_CH_INTERACTIVE` is not supported.

Returns

```
OPOS_SUCCESS
```

`CheckHealthText` property will hold the text result of this method call.

#### ClearInput:

Returns

```
OPOS_SUCCESS
OPOS_E_DISABLED
OPOS_E_NOTCLAIMED
```

#### DirectIO:

Returns

```
OPOS_SUCCESS
OPOS_E_NOTCLAIMED
```



`OPOS_E_OFFLINE`

`OPOS_E_ILLEGAL`



Please refer to Appendix A for supported DirectIO functions.

### **ReleaseDevice:**

Returns `OPOS_SUCCESS`, `OPOS_E_ILLEGAL`, or `OPOS_E_NOTCLAIMED`.

This call will deactivate the communication with the device.

### **ResetStatistics:**

Returns `OPOS_E_ILLEGAL`

**DATALOGIC** service objects do not support reset statistics.

### **RetrieveStatistics:**

Returns

`OPOS_SUCCESS`

`OPOS_E_NOHARDWARE`

`OPOS_E_DISABLED`

`OPOS_E_NOTCLAIMED`

`OPOS_E_ILLEGAL`

Results of the **RetrieveStatistics** call are written to the OPOS Log and returned as per the OPOS spec.

Supported statistics are:

- Device category
- Manufacturer
- Model number
- Serial Number
- Firmware revision
- Interface type
- Power on time
- Number of label scans

### **UpdateStatistics:**

Returns `OPOS_E_ILLEGAL`

**DATALOGIC** OPOS Scanner service object does not support update statistics.

### **Device Specific Methods:**

None.

## Scanner Events:

### Common Event:

#### DataEvent:

This event fires when a label is forwarded from scanner.

#### DirectIOEvent:

Not supported.

#### ErrorEvent:

Not used.

#### StatusUpdateEvent:

Not implemented.

### Device Specific Events:

None.

## Scale Properties:

### Common Properties:

#### AutoDisable:

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

#### BinaryConversion:

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

#### CapCompareFirmwareVersion:

Returns **FALSE**.

#### CapPowerReporting:

Returns **OPOS\_PR\_NONE**.

#### CapStatisticsReporting:

Returns **FALSE**.

#### CapUpdateStatistics:

Returns **FALSE**.

#### CapUpdateFirmware:

Returns **FALSE**.

#### CheckHealthText:

**Internal HCheck:** not supported, will return **OPOS\_E\_ILLEGAL**.

**External HCheck:** not supported.

**Interactive HCheck:** not supported.

**Claimed:**

Returns **TRUE** after Claim method has been called. **FALSE** otherwise.

**DATALOGIC** devices are exclusive. It is recommended that the device be claimed and continue to be claimed thru-out a session.

**DataCount:**

Returns **Number of Data Events Queued**.

**DataEventEnabled:**

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

**DeviceEnabled:**

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

**FreezeEvents:**

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

**OpenResult:**

Returns 0.

**PowerNotify:**

Returns **OPOS\_PN\_DISABLED** or **OPOS\_PN\_ENABLED**.

**PowerState:**

Returns **OPOS\_PS\_ONLINE**.

If the communication channel is having difficulties, an **OPOS\_E\_NOHARDWARE** will be returned on calls that send and receive data from the scanner.

**ResultCode:**

Returns result of last operation.

**ResultCodeExtended:**

Returns extended result if the last operation produced an **OPOS\_E\_EXTENDED**. Otherwise this value is considered invalid.

**State:**

Returns

**OPOS\_S\_CLOSED**

**OPOS\_S\_IDLE**

**OPOS\_S\_ERROR**

**DeviceServiceDescription:**

Returns a descriptive string depending on the interface and device type.

**DeviceServiceVersion:**

Returns **10120xxx** where **xxx** is the minor version.

**PhysicalDeviceDescription:**

Returns a descriptive string depending on the interface and device type.

**PhysicalDeviceName:**

Returns a descriptive string depending on the interface and device type.

**Device Specific Properties:**

**CapDisplay:**

Returns **TRUE**.

**TRUE** is returned regardless of a remote display being connected to the scanner/scale or not.

**CapDisplayText:**

Returns **FALSE**.

**FALSE** is returned regardless of a remote display being connected to the scanner/scale or not.

**CapPriceCalculating:**

Returns **FALSE**.

**CapStatusUpdate:**

Returns **TRUE**.

**CapTareWeight:**

Returns **FALSE**.

**CapZeroScale:**

Returns **TRUE**.

**AsyncMode:**

Returns **TRUE** or **FALSE** depending on the previous **SetProperty** call.

**MaxDisplayTextChars:**

Returns 0.

**MaximumWeight:**

Returns 15000 in metric mode.

Returns 30000 in pound mode.

**ScaleLiveWeight:**

Updated if **LiveWeight** is enabled.

**StatusNotify:**

If **CapStatusUpdate** is **TRUE**, the application can set **StatusNotify** to either **SCAL\_SN\_DISABLED** or **SCAL\_SN\_ENABLED**.

**SalesPrice:**

Returns 0 currency.

**TareWeight:**

Returns 0.

**UnitPrice:**

Returns 0 currency.

**WeightUnit:**

Returns **SCAL\_WU\_KILOGRAM** in metric mode.

Returns **SCAL\_WU\_POUND** in pound mode.

**Scale Methods:****Common Methods:****Open:**

Returns

**OPOS\_SUCCESS**  
**OPOS\_E\_NOSERVICE**  
**OPOS\_E\_ILLEGAL**

**Close:**

Returns **OPOS\_SUCCESS**.

**ClaimDevice:**

Returns

**OPOS\_SUCCESS**  
**OPOS\_E\_NOSERVICE**  
**OPOS\_E\_ILLEGAL**  
**OPOS\_E\_CLAIMED**

This call will activate the communication with the device. **DATALOGIC** devices are exclusive. It is recommended that a program keep the device **Claimed** as long as the application is running.

**CheckHealth:**

**OPOS\_CH\_INTERNAL** is supported.

**OPOS\_CH\_EXTERNAL** is supported.

**OPOS\_CH\_INTERACTIVE** is supported.

Returns

**OPOS\_SUCCESS**  
**OPOS\_E\_NOTCLAIMED**  
**OPOS\_E\_DISABLED**  
**OPOS\_E\_ILLEGAL**

**CheckHealthText** property will hold the text result of this method call.

### **ClearInput:**

Returns

**OPOS\_SUCCESS**  
**OPOS\_E\_DISABLED**  
**OPOS\_E\_NOTCLAIMED**

### **DirectIO:**

Returns

**OPOS\_E\_NOTCLAIMED**  
**OPOS\_E\_OFFLINE**  
**OPOS\_E\_ILLEGAL**



Please refer to Appendix A for supported DirectIO functions.

### **ReleaseDevice:**

Returns **OPOS\_SUCCESS**.

**OPOS\_E\_ILLEGAL** if the device has not been claimed.

This call will deactivate the communication with the device. It is recommended that a program keep the device Claimed until an application quits.

### **ResetStatistics:**

Returns **OPOS\_E\_ILLEGAL**

**DATALOGIC OPOS** Scale service objects do not support reset statistics.

### **RetrieveStatistics:**

Supported on all interfaces.

Returns **OPOS\_SUCCESS** or **OPOS\_E\_ILLEGAL**.

### **UpdateStatistics:**

Returns **OPOS\_E\_ILLEGAL**.

**DATALOGIC OPOS** Scale service objects do not support update statistics.

## Device Specific Methods:

### GetSalesPrice:

Returns 0

Not implemented

### GetUnitPrice:

Returns 0

Not implemented

### SetUnitPrice:

Returns **OPOS\_E\_ILLEGAL**

Not implemented

### DisplayText:

Returns **OPOS\_E\_ILLEGAL**

### ReadWeight:

Returns

**OPOS\_SUCCESS**

**OPOS\_E\_EXTENDED**

**OPOS\_E\_TIMEOUT**

**CANCELLED**

**OPOS\_E\_NOTCLAIMED**

**OPOS\_E\_DISABLED**

**OPOS\_E\_OFFLINE**

**OPOS\_E\_ILLEGAL**

**OPOS\_E\_FAILURE**

**OPOS\_E\_BUSY**

**OPOS\_E\_NOHARDWARE**

If the result is **OPOS\_SUCCESS** valid weight is returned.

If the result is **OPOS\_E\_EXTENDED** extended status will return either **OPOS\_ESCAL\_OVERWEIGHT** or **OPOS\_ESCAL\_UNDER\_ZERO** in result code extended.

If the result is **OPOS\_E\_TIMEOUT** there was not valid settled weight on the platter before the timeout. **Weight** and the **ExtendedStatus** values are invalid.



The Weight Unit entry in the Settings.xml file must match the Scale configuration (Metric or English). See the XML File Description document installed in the Programs list under Datalogic Scanning for a complete description of the XML file settings.

### **ZeroScale:**

Returns

OPOS\_SUCCESS  
OPOS\_E\_NOHARDWARE  
OPOS\_E\_OFFLINE  
OPOS\_E\_DISABLED  
OPOS\_E\_NOTCLAIMED

## **Scale Events:**

### **Common Event:**

#### **DataEvent:**

Used for asynchronous weight requests

#### **DirectIOEvent:**

Not supported

#### **ErrorEvent:**

Used if a cancel weight is called during an asynchronous weight request

#### **StatusUpdateEvent:**

Not supported

### **Device Specific Events:**

None



# Appendix A: DirectIO Command Support.

DirectIO name	IO number						
		Scanner			Scale		
		RS232 Std	RS232 SC	OEM USB	RS232 Std	RS232 SC	OEM USB
LEGACY SCANNER for backwards compatibility							
SCANNER_RESET	1	●					
SCANNER_BEEP	2	●					
SCANNER_NOT_ON_FILE	3	●					
LEGACY SCANNER DirectIO for backwards compatibility							
SCALE_STATUS	1				●		
SCALE_SELFTEST	2				●		
RS232 SC, OEM USB, RS232 Std SCANNER/SCALE							
HARD_RESET	1		●			●	
SCANNER_STATUS	2						
SWITCH_READ	3		●				
NOT_ON_FILE	4		●	●			
DISABLE_WITH_RED_LIGHT	5		●				
SC_SCALE_STATUS	6					●	

DirectIO name	IO number						
		Scanner			Scale		
		RS232 Std	RS232 SC	OEM USB	RS232 Std	RS232 SC	OEM USB
SCALE_MONITOR	7					•	
DISPLAY_DATA	8		•			•	
DISPLAY_STATUS	9		•			•	
ENABLE_TONE	10		•				
BEEP_GOOD_TONE	11		•	•			
SOFT_POWER_DOWN	12		•			•	
DISABLE_TONE	13		•				
ENTER_TOAD_MODE	14		•				
READ_PACESETTER	15		•				
RESET_PACESETTER	16		•				
ENABLE_PACESETTER	17		•				
DISABLE_PACESETTER	18		•				
SOFT_RESET	19		•				
RETRIEVE_DEVICE_IDENTIFIER_RECORD	20	•	•	•		•	
RETRIEVE_DEVICE_EXTENDED_STATUS_RECORD	21	•	•	•		•	
RETRIEVE_DEVICE_HEALTH_RECORD	22	•	•	•		•	
NCR Scanner DirectIO for compatibility							
SCANNER_TONE	500		•				
SCANNER_RESET	501		•				

DirectIO name	IO number						
		Scanner			Scale		
		RS232 Std	RS232 SC	OEM USB	RS232 Std	RS232 SC	OEM USB
SCANNER_STATUS	502		●				
SCANNER_READROM	503						
SCANNER_ROM_VERSION	504		●				
SCANNER_PACESETTER	505		●				
SCANNER_DIRECT	506						
SCANNER_NOT_ON_FILE	507						
NCR Scale DirectIO for compatibility							
SCALE_STATUS	600					●	
SCALE_READROM	601						
SCALE_ROM_VERSION	602					●	
SCALE_LIVE_WEIGHT	603					●	
SCALE_DIRECT	604						
SCALE_WEIGHT_DELAY	605						

Note: Some DirectIo calls may not be supported by the scanner/scale firmware.

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