# ScaleCore Connect

ScaleCore PC Software

# **Software Manual**



ScaleCore Connect Works With All ScaleCore-based MSI Products



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www.ricelake.com

# **Revision History**

This section tracks and describes manual revisions for awareness of major updates.

Revision	Date	Description
С	June 20, 2023	Established revision history

Table i. Revision Letter History



Technical training seminars are available through Rice Lake Weighing Systems. Course descriptions and dates can be viewed at <u>www.ricelake.com/training</u> or obtained by calling 715-234-9171 and asking for the training department.

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Rice Lake continually offers web-based video training on a growing selection of product-related topics at no cost. Visit <u>www.ricelake.com/webinars</u>

## 1.0 Introduction

ScaleCore Connect can be used to program and configure all MSI ScaleCore based products. ScaleCore Connect allows complete backup, copy and restore of a scale configuration including calibration.



Manuals are available from Rice Lake Weighing Systems at www.ricelake.com/manuals

Warranty information is available at www.ricelake.com/warranties

## 1.1 Installation

This section provides an overview of ScaleCore Connect software installation.

#### 1.1.1 System Requirements

Specifications subject to change without notice.

Windows® Operating System

Display: 800 x 600 or greater

Built-in serial port or USB to serial port adapter

FTDI chip set required (Tripp-Lite USB/Serial Adapter (PN 153603) recommended)

JAVA JRE 1.7 or newer

To download and install JAVA JRE: https://java.com/en/download/manual.jsp

#### 1.1.2 Install Program

To install ScaleCore Connect:

- 1. Open the Rice Lake website and navigate to the ScaleCore Connect product page.
- 2. Download the ScaleCore Connect software to the computer.
- 3. Extract the ScaleCore Connect folder.
- 4. Open the folder and double click on ScaleCoreConnect\_XX-XX.exe.

NOTE: Folder structure must be kept intact. Application will not work without the companion folder.

- 5. A security warning may display, press Run to continue.
- 6. ScaleCore Connect will automatically connect to any connected ScaleCore device.
  - If a device was not connected to the PC before launching the application, connect device and press
     Auto Connect to establish the connection for configuration/setup of the device.

File Administration	Communications	Program	Help
Connected Devic Device Profiles	es Auto Connect	Device	
Configuration Load Cells Calibration Inputs / Outputs Monitors			Please Select a Device
			Select Auto Connect

Figure 1-1. ScaleCore Connect Main Display



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# 2.0 Configuration

This section provides an overview of ScaleCore Connect software configuration.

This section is a guide for setting up the product being read by the ScaleCore Connect program.

Prior to making changes to a product profile it is recommended to save a backup (Section 3.4.2 on page 26).

At anytime during set up, press **Cancel** to return to previous page without saving.

## 2.1 Connect a Device

ScaleCore Connect supports interfacing to the compatible ScaleCore device from an RS-232 connection. See connecting device technical manual for RS-232 connection information.

## 2.2 Connected Devices

Displays currently connected devices. Devices must be connected and powered on to be visible.



Figure 2-1. Connected Devices

1. Press Auto Connect . Connected devices display.

2. Select the device to configure and press select

## 2.3 Device Profiles

Displays the available device profiles. See Section 3.5 on page 27 for the advanced setup of the device profiles.



Figure 2-2. Device Profiles

## 2.4 Configuration

Displays connected devices. Select an available device to view and configure settings.

## 2.4.1 Auto connect

Auto Connect triggers a new search for available devices.

ScaleCore Connect		- 0 <b>X</b>
File Administration Com	nmunications Program Help	
Connected Devices Device Profiles	Auto Connect Device	
Configuration Auto Connect	Please Select a Device	
Product Info	MSI6360; comm:COM8;baudrate=9600;databits=8;stopbits=1;parity=NONE;flowcontrol=XONXOFF	
DAC		
Meter Features		
Scan Lists		
Load Cells		
Calibration		
Inputs / Outputs Monitors		

Figure 2-3. Configuration Display

## 2.4.2 Product Info

Displays product information.

NOTE: Do not change these settings without consulting Rice Lake Weighing Systems or a local dealer.



Figure 2-4. Product Info Settings

- 1. Select Configuration.
- 2. Select Product Info.
- 3. Enter the following parameters:

Parameter	Description			
Device ID	Number given to the current product (selections: 1–255)			
User Defined Model	ATP 3 C Cells 6 D Cells 6V Battery 12V Battery 110V AC CHI 107 CHI 234 AC Power DC Power	Power source of current product IMPORTANT: Only 12V Battery unless alternate power source is supported as part of a special order. Changing this setting could cause the battery to enter a deep discharge state which could reduce battery life or damage the battery.		
User Model Name	Enter a name for the product			
PCB Serial Number	Serial number for the PCB board, read only			
Product Serial Number	Serial number of displayed product, read only			
Software Version	Displays the version of software currently installed, read only			

Table 2-1. Product Info Settings Parameters

4. Press

Commit

to save. New settings will not take affect until power is cycled on the product.



## 2.4.3 DAC Configuration

ScaleCore Connect provides controls for DAC (Digital to Analog) output functions in ScaleCore products. Controls include calibration and manual control.

- 1. Select Configuration.
- 2. Select DAC.

File Administration Con	nmunications Program He	lp			
Connected Devices Device Profiles	DAC Configuration		MS17000 , id = 0		
Configuration Auto Connect Product Info		Dac Channel: 0, Calibra	alibrated		
DAC RF Meter Features Scan Lists	DAC Channel	Status Disabled 💌	Operation Mode Normal 💌	Source Sensor ID	
Load Cells Calibration Inputs / Outputs Monitors	Unit Ib	Value Type Gross	Min Sensor Value	Max Sensor Value	
	Not Filtered Sensor Value				
	DAC Offset	DAC Gain	Min DAC Count	Max DAC Count 65535	
	Output Mode OV to 5V				
		Comm	it		

Figure 2-5. DAC Configuration

3. Enter the following parameters:

Parameter		Description	
DAC Channel	Select the channel to be used		
Status	Select Disabled (default) or Enabled		
Operation Mode	Select Normal (d	lefault) or Manual	
Source Sensor ID	Select a number 1–16		
Unit	Ib kg Ton MTon oz gram kNewton V amp °C °F Kelvin	Select unit to be used	
Value Type	Gross Net Total Tare Zero Peak ADC count Curent Mode	Select value type to be used	
Min Sensor Value	Enter min sensor value acceptable		
Max Sensor Value	Enter max sense	or value acceptable	
Not Filtered Sensor Value	Check box is app	blicable	

Table 2-2. DAC Configuration Parameters



Parameter		Description	
DAC Offset	Current calibration value		
DAC Gain	Current calibration value		
DAC Count	Current calibration value		
Min DAC Count	Enter min DAC Count acceptable		
Max DAC Count	Enter max DAC Count acceptable		
Output Mode	0 V to 5 V 0 V to 10 V ± 5 V ± 10 V 4 to 20 mA 0 to 20 mA 0 to 24 mA	Select output mode to be used	

Table 2-2. DAC Configuration Parameters (Continued)

4. Press Commit to save.

## 2.4.4 RF Configuration (RF)

Allows the setup of RF cards available in the products connected.

NOTE: See the individual MSI ScaleCore product manuals for proper RF setting configurations. If the ScaleCore product has an optional second modem, the second modem is not field configurable. Contact Rice Lake Weighing systems for cofiguration information.

Connected Devices Device Profiles	RF Configuration			MSI6360, id = 0
Configuration Auto Connect Product Info DAC		Status Enabled 💌	Channel 16 💌	Network ID (0 to 65534) 7000
kr Meter Features Scan Lists Date Time Load Cells Calibration Inputs / Outputs Monitors		Device Type XBee	Power Level	Always On Enabled

Figure 2-6. RF Configuration

- 1. Select Configuration.
- 2. Select RF.
- 3. Enter the following parameters:

Parameter	Description
Status	Select Enabled (default) or Disabled
Channel	Select a channel from 12–23
Network ID	Enter a number from 0–65534 for an ID
Device Type	Select XBee or Other (for all other cards installed)
Power Level	Select a level from 0-4
Always On	Select Enabled (default) or Disabled

Table 2-3. RF Configuration Parameters

NOTE: Only set Always On to Enabled when using Rugged Remote. Having this parameter set to Enabled will drain the battery even when the scale if off. Disconnect the battery when not in use.

Commit to save. New settings will not take effect until power is cycled on the product.

NOTE: Channel, Network ID, and Power Level are only used with the 802.15.4 radio option. If the device does not have a secondary 802.15.4 radio option installed, these settings will have no effect on the scale.



IMPORTANT: Changing the RF status will result in loss of connection to scale. Connection will need to be reconfigured using the front panel or the serial port.



4. Press

## 2.4.5 Meter Features

- 1. Select Configuration.
- 2. Select Meter Features.

Connected Devices Device Profiles	Meter Features	MSI7000 , id = 0
Configuration Auto Connect Product Info DAC RF Meter Features	Focus Load Cell ID 2	Max Number Load Cell Reroute Mode           1         Image: Control of Contr
Scan Lists Load Cells Calibration Inputs / Outputs Monitors	Off	None

Figure 2-7. Meter Features Settings

3. Enter the following parameters:

Parameter		Description	
Focus Load Cell ID	Select a number from 1–5		
Max Number Load Cell	Select a number from 1–4		
Reroute Mode	Select Enabled or Di	sabled (default)	
Summing Mode	Off All Pairs Both User Defined	Select a combination to add loads	
Selected Summing Mode	None All Pairs Loadcell 1 & 2 Pairs Loadcell 3 & 4	Select an option if further definition is needed for summing	

Table 2-4. Meter Feature Settings Parameters

4. Press **Commit** to save.

## 2.4.6 Date Time

Date Time configuration displays Date and Time setup information.

NOTE: Time and date can only be set on ScaleCore products that have internal clock circuitry and software. If your product does not support time and date, please contact Rice Lake Weighing systems of your local scale dealer for options.



Figure 2-8. Date Time Configuration

- 1. Select Configuration, then Date Time.
- 2. Make any necessary changes date and time or select Use Computer Time.
- 3. Press **Commit** to save.

## 2.4.7 Scan Lists

Automatically scan all available serial ports and RF network for any attached ScaleCore devices.

- 1. Select Configuration.
- 2. Select Scan Lists.

File Administration Com	munications Program Help		
Connected Devices Device Profiles	Sensor Scan List Settings		MS17000 , id = 0
Configuration Auto Connect Product Info		Scan List Number :	
DAC RF Meter Features	Scan List Number	Remote Device ID	Source Sensor ID
Scan Lists Load Cells Calibration			
Inputs / Outputs Monitors		Commit	

Figure 2-9. Sensor Scan List Settings

3. Enter the following parameters:

Parameter	Description
Scan List Number	Select a scan list number
Remote Device ID	Select a remote device ID number
Source Sensor ID	Select a source sensor ID number
Table 2-5. Sensor	Scan List Settings Parameters

4. Press Commit to save.



#### 2.5 Load Cells

The Load Cells menu displays parameters related to the load cell configuration.

#### 2.5.1 General

The General menu displays parameters for each load cell associated with the connected device.

File Administration Comr	munications Program Help	p		
Connected Devices Device Profiles	Load Cell General Settings		MS	317000 , id = 0
Configuration Load Cells General		Load Cell Number :	1	
Zero, Standard Total Math Maintenance	Load Cell Number	Load Cell Enabled Enabled	Filter Off	Load Cell Name Load Cell
Cal Records Calibration Inputs / Outputs Monitors	Motion Enabled Disabled 👻	Motion Detect Period In 50 mSec Tick 20 💌	Motion Band In D 0=0.5D, 1=1D etc 3	Pending Time In 50 m Sec Tick 40
	Viewing Ca 100000.0 Under Load Threshold in	Percentage of Viewing C	Viewing 10 apacity. For Example, 2	Countby
		Col	nmit	

Figure 2-10. Load Cell General Settings

- 1. Select Load Cells, then General.
- 2. Make any necessary changes in the following parameters:

Parameter	Description
Load Cell Number	Select a load cell number 1–5
Load Cell Enabled	Select Enabled (default) or Disabled
Filter	Set filtering to Off, Low, Medium or High
Load Cell Name	Enter a name to identify the load cell
Motion Enabled	Select Enabled or Disabled (default)
Motion Detect Period in 50 mSec Tick	Select a number from 1-255
Motion Band in D, 0=0.5D, 1=1D etc.	Select a number from 1-255
Pending Time in 50 mSec Tick	Select a number from 1-255
Viewing Capacity	Enter Capacity
Viewing Countby	Select 0.0001-5000
Under Load Threshold	Select a number from -100 to 90

Table 2-6. Load Cell General Settings Parameters

3. Press Commit to save.



## 2.5.2 Zero, Standard

The Zero, Standard display defines the regulatory standard of a device. Additionally, all of the parameters for zeroing the scale can be adjusted in this display. Parameters vary by selected standard mode.

Connected Devices Device Profiles	Load Cell Zero Settings		MSI 6	360, id = 0
Configuration Load Cells General Zero, Standard Total	Standard Mode Industry	AZM Enabled	Motion Detection Disabled	Zero On Power Up Disabled
Math Maintenance Cal Records Calibration Inputs / Outputs Monitors	Load Cell Number 1 The following are in Per	AZM Range in D	AZM Period in 50 milli Se 40 💌 Example, 20, means 20% of	capacity.
Piolitorio	Zero High Band	Zero Low Band	Power Up Zero Hi Band	Power Up Zero Low Band
	100 💌	20 💌	20 💌	20 💌
		C	ommit	

Figure 2-11. Load Cell Zero Settings

- 1. Select Load Cells, then Zero, Standard.
- 2. Enter the following parameters for the current product::

Parameter	Description
Standard Mode	Select Industry, NTEP, OIML or One Unit
AZM	Select Disabled or Enabled
Motion Detection	Select Disabled or Enabled
Zero On Power Up	Select Disabled or Enabled
Load Cell Number	Select the load cell number from 1-4
AZM Range in D	Select a number from the AZM range (0-255)
AZM Period in 50 milli Sec	Select a number from the AZM period (20-255)
Zero High Band	Select the zero high band number from 1-100 (in percentage of capacity)
Zero Low Band	Select the zero low band number from 1-20 (in percentage of capacity)
Power Up Zero Hi Band	Select the power up zero hi band number from 1-25 (in percentage of capacity)
Power Up Zero Low Band	Select the power up zero low band number from 1-20 (in percentage of capacity)

Table 2-7. Load Cell General Settings Parameters

3. Press **Commit** to save.



## 2.5.3 Total

The Total display defines Total mode of a load cell. Total mode allows for consecutive weighments to be summed in a combined total. All of the parameters that control the timing and thresholds of the chosen Total mode can be adjusted in this display.

Connected Devices Device Profiles	Load Cell Total Settings	MSI6360,id = 0
Configuration Load Cells General Zero, Standard Total	Load Cell Number Total Mode     1   Image: Constraint of the second	Minimum Stable Time in 50 milli Sec
Math Maintenance Cal Records	Lower Bound Weight Accept 0.0	Upper Bound Weight Accept 2000.0
Calibration Inputs / Outputs Monitors	The following are in Percentage of Capacit	y. For Example, 20, means 20% of Capacity.
	Drop Threshold 0	Rise Threshold
	Com	mit

Figure 2-12. Load Cell Total Settings

- 1. Select Load Cells, then Total.
- 2. Make any necessary changes in the following parameters:

Parameter		Description
Load Cell Number	Select the load cell i	number from 1–5
Total Mode	Disabled Auto Load Auto Normal Auto Peak Load Drop	Select the type of total mode for the connected product
	On Command	
Minimum Stable Time	Select the minimum stable time from 0-255 (in 50 ms)	
Lower Bound Weight Accept	Enter the lower bound weight	
Upper Bound Weight Accept	Enter the upper bound weight	
Drop Threshold	Select the drop threshold number from 0–100 (in percentage of capacity)	
Rise Threshold	Select the rise threshold number from 0–100 (in percentage of capacity)	

Table 2-8. Load Cell Total Settings Parameters

3. Press Commit

to save. New settings will not take affect until power is cycled on the product.



## 2.5.4 Math

The Math Channel Settings display configures multiple load cell sensors to combine into one output measurement. Math Channel settings transfer to the connected device. Once the device is disconnected from ScaleCore Connect, the device's math channel will use the Math Expression configuration to sum up to 3 sensors as the output measurement. This is useful if a load is being lifted from more than one point.

Connected Devices Device Profiles	Math Channel Settings	MSI6360 , id = 0
Configuration Load Cells General Zero, Standard Total	Enabled Enabled	•
Math Math Cal Records Calibration Inputs / Outputs Monitors	Math Expr 0+1 Math expression cu For example, 0+1+2 mean Sensor number Con	ession rrently only supports adding. s value of sensor1 + sensor2 + sensor3. ranges from 0 to 3. <b>mit</b>

Figure 2-13. Math Channel Settings

- 1. Select Load Cells, then Math.
- 2. Make any necessary changes in the following parameters:

Parameter	Description
Enabled	Select Enabled or Disabled
Math Expression	Enter math expression

Table 2-9. Math Channel Settings Parameters

3. Press Commit to save.

#### 2.5.5 Maintenance

See Section 3.6 on page 27 for the advanced setup of the maintenance settings.

NOTE: Do not change these settings without consulting Rice Lake Weighing Systems or a local dealer.

File Administration Con Connected Devices Device Profiles	mmunications Program Help Maintenance Settings MSI7000	, id = 0
Configuration Load Cells General	Load Cell Number : 1	
Zero, Standard Total Math Maintenance Cal Records	Lift Count: 634 Overload Count: 543	
Calibration Inputs / Outputs Monitors	Thresholds as percentage of capacity. 0=0.5%, 1=1%, 100 = 100% Lift Threshold Drop Threshold 5     1	etc

Figure 2-14. Maintenance Settings

1. Select Load Cells, then Maintenance.



2. Make any necessary changes in the following parameters:

Parameter	Description	
Load Cell Number	Load cell number (read only)	
Lift Count	Number of times the load cell has exceeded the Lift Threshold (read only)	
Overload Count	Number of times the load cell has exceeded capacity (read only)	
Load Cell Numbers	Select the sensor ID from 1-4	
Lift Threshold	Select the lift threshold number from 0–100 (in percentage of capacity, 0=0.5%, 1=1%, 100=100%)	
Drop Threshold	Select the drop threshold number from 0–100 (in percentage of capacity, 0=0.5%, 1=1%, 100=100%)	

Table 2-10. Maintenance Settings Parameters

3. Press **Commit** to save.

#### 2.5.6 Calibration Records

The Calibration Records display maintains a record of the calibration of each load cell for maintenance and regulatory purposes.

- 1. Select Load Cells then select Cal Records.
- 2. Select Load Cell Number and the recorded calibration settings for selected load cell displays.

File Administration Con	nmunications Program Help	
Connected Devices Device Profiles	Load Cells Calibration Records	MS17000 , id = 0
Configuration		
Load Cells		Load Cell Number
General Zoro Standard		
Total		
Math		
Maintenance		
Cal Records	MSI7000, Product Serial Number: 0	
Calibration		
Inputs / Outputs	Load Cell Number: 1 Not Calibrated,	Capacity: 10000.0 countBy: 1.0 unit.lb
Monitors	(ADO sound Misisht)	
	(ADC count, weight)	
	(0,0.0)	
	(0,0.0)	
	(0,0.0)	
	(0,0.0)	
	(0,0.0)	

Figure 2-15. Load Cells Calibration Records



## 2.6 Calibration

A visual interface for performing the available types of load cell calibration to ensure the ScaleCore product is accurate. The available methods of calibration are:

Parameter	Description	
Full Cal Load Cell	Enter scale unit, capacity and countby	
Re-Cal Load Cell	Uses current scale unit, capacity and countby	
Full C-Cal Load Cell	Enter scale unit, capacity and countby; Allows calibration using a Constant Calibration (C.Cal) number without the requirement of test weights	
	Allows calibration using a Constant Calibration (C-Cal) number without the requirement of test weights	
	Allows a calibration using a C-Cal number without the requirement of test weights	
Multi Load Cell	Use when calibrating multiple load cells, select all load cells to be calibrated and enter scale unit, capacity and countby	

Table 2-11. Setpoints Configuration Parameters

## 2.6.1 Full Calibration

- 1. Select Calibration.
- 2. Select Full Cal Load Cell.

File Administration Con	nmunications Program Help	
Connected Devices Device Profiles	Full Load Cell Calibration	MSI7000 , id = 0
Configuration Load Cells Calibration Full Cal Load Cell Re-Cal Load Cell Full C-Cal Load Cell Multi Load Cell Inputs / Outputs Monitors	Load Cell ID	Step 1. Selected Load Cell ID
		Set Load Cell ID

Figure 2-16. Select Load Cell ID

- 3. Select the Load Cell ID number from 1–4 then press Set Load Cell ID 4. Set the **Unit** and **Capacity** parameters then press Set Unit And Capacity NOTE: Press to end current calibration and restore the previous calibration. Cancel 5. Select the desired **Countby** parameter then press Set Selected Countby 6. Ensure there is no weight on the load cell then press **Unload Test Weight** Enter the test weight value then press Set Test Weight #X 7. 8. Press . The constant cal number is displayed, document the number for use later if needed. Finish
  - 9. Repeat steps above for each load cell to be calibrated.

# NOTE: The calibration table may be configured. Configuration should only be done by Rice Lake Weighing Systems or a trained calibration technician.

Modifications applied to the calibration table may invalidate the calibration (Figure 2-17).



evice Profiles	ull Load Cell Calibration		MSI4260M , id= 0
onfiguration oad Cells alibration Full Cal Load Cell Re-Cal Load Cell Full C-Cal Load Cell Re-C-Cal Load Cell Multi Load Cell nputs / Outputs Ionitors	Load Cell ID Unit LB  Capacity 10000.0	Step 2. Set Unit And Cap	acity
	Cancel	Set Unit And Cap	acity
	ADC count: -2 sensor ID: 1 status: 254 Cap	Weight: 0.0 0: 10000.0 countBy: 1.0 unit: II:	
	ADC Count	Weight	Update Table
	0	0	
	15000	1,000	
	15000	1,000	
	15000	1,000	

## 2.6.2 Re-Calibration

- 1. Select Calibration, then Re-Cal Load Cell.
- 2. Select the Load Cell ID number from 1-4.
- 3. Press Set Load Cell ID
- 4. Ensure there is no weight on the load cell, then press
- 5. Enter the test weight value, then press Set Test Weight #X
- 6. Press **Finish**. The constant calibration number is displayed, document the number for use later if needed.

**Unload Test Weight** 

**Unload Test Weight** 

**Unload Test Weight** 

Set Constant Cal #

7. Repeat steps above for each load cell to be re-calibrated.

#### 2.6.3 Full Constant Calibration

- 1. Select Calibration, then Full C-Cal Load Cell.
- 2. Press Set Load Cell ID
- 3. Set the Unit and Capacity parameters.
- 4. Press Set Unit And Capacity
- 5. Select the desired **Countby** parameter then press **Set Selected Countby**
- 6. Ensure there is no weight on the load cell then press
- 7. Enter the constant calibration number then press

## 2.6.4 Constant Re-Calibration

- 1. Select Calibration then select Re-C-Cal Load Cell.
- 2. Press Set Load Cell ID
- 3. Ensure there is no weight on the load cell then press
- 4. Enter the constant calibration number then press Set Constant Cal #



### 2.6.5 Multi Load Cell Calibration

NOTE: To perform this calibration all sensors must be of the same capacity and must be loaded evenly during the calibration process.

- 1. Select Calibration, then Multi Load Cell.
- 2. Select required Load Cell check boxes.

File Administratio	on Communications Program Help			
Connected Dev Device Profiles	vices Multi-load Cells Equal Weight Calibra	ation	MSI7001 , id= 0	
Configuration Load Cells	Step 1	. Selected Load Cells		
Calibration Full Cal Load Re-Cal Load Full C-Cal Loa Re-C-Cal Loa Multi Load Ca Inputs / Outpu Monitors	Cell Load Cells Cell Id Cell d Cell HI HI	⊻ 1	4	
		Set Selected Load Cel	ls	
	ADC Count: We	eight:		
<ol> <li>Set the Unit and C</li> </ol>	apacity parameters then press	Set Unit	And Capacity	
NOTE: The Capacity s	et is for each load cell channel, n	ot the total combine	d.	
NOTE: Press Canc	et to end current calibration	and restore the prev	ious calibration.	
5. Select the desired	Countby parameter then press	Set Selec	cted Countby	
6. Ensure there is no	weight on the load cell then pres	S Unioa	d Test Weight	
7. Enter the test weig	ht value then press	Set Test Weight # X		
NOTE: The the test we applied.	eight will be distributed evenly be	tween all load cells.	The span point Test Weig	ht is the to

- 8. Once calibration is complete, the Math Channel must be configured to equal the sum of the capacity for each channel. See Section 2.5.4 on page 15 for Math Channel set up.
- 9. Press **Finish**. The constant cal number is displayed, if needed, record the number for use later.

## 2.7 Inputs / Outputs

The Inputs / Outputs menu displays parameters related to input and output function of the scale.

## 2.7.1 Setpoints

Setpoints provide a trip point for load values.

ScaleCore Connect				
File Administration Con	nmunications Program He	elp		
Connected Devices Device Profiles	Setpoints Configuration		MSI6360,	id = 0
Configuration Load Cells		Setpoint Number: 1		
Inputs / Outputs Setpoints Stream Print String	Setpoint Number	Status Disabled 💌	Source Sensor ID	Relay Output Mode Coil
Monitors	Comparison Logic Greater Than	Comparison Value	Value Type Net Gross	Hysteresis In D 3
		Com	mit	

Figure 2-19. Setpoint Configuration

- 1. Select Inputs / Outputs, then Setpoints.
- 2. Make any necessary changes in the following parameters:

Parameter		Description	
Setpoint Number	Select the setpo	int number from 1–3	
Status	Select Disabled or Enabled		
Source Sensor ID	Select the source sensor ID number from 1–5		
Relay Output Mode	Select Coil or Latch		
Comparison Logic	Select Undefined, Greater Than or Less Than		
Comparison Value	Enter the comparison value		
Value Type	Net Gross Gross Total Total Count Lift Count	Select the value type parameter	
Hysteresis in D	Select the hyste	resis in D number from 0–99	

Table 2-12. Setpoints Configuration Parameters

3. Press **Commit** to save.

### 2.7.2 Stream Print String

See Section 3.7 on page 27 for the advanced setup of the stream print string settings.

NOTE: Do not change these settings without consulting Rice Lake Weighing Systems or a local dealer.

## 2.8 Monitors

Monitor mode displays a terminal monitor view or a meter monitor view.



Figure 2-20. Monitors Menu

## Terminal

Terminal monitor view displays a blank screen that returns print string data that is useful when modifying the Stream Print String settings.

NOTE: Terminal monitor should only be used for troubleshooting by qualified Rice Lake Weighing Systems technicians.

## Meter

Meter monitor view displays a virtual indicator weigh mode for the connected scale.



Figure 2-21. Meter Monitor View



# 3.0 Advanced Setup

This section is a guide for the advanced setup of the product being read by the ScaleCore Connect program.

The following setup instructions are for dealers or service technicians only. Please contact Rice Lake Weigh Systems or a local dealer for assistance before proceeding.

Prior to making changes to a product profile it is recommended to save a backup (Section 3.4.2 on page 26).

At anytime during set up, press **Cancel** to return to previous page without saving.

## 3.1 File Menu

Used to open an existing profile or exit the program.

File Administration Com	imunications Program Help
Open Profile Ctrl-O	Auto Connect Device
Load Cells Calibration Inputs / Outputs Monitors	Please Select a Device

Figure 3-1. File Menu Selections

## 3.1.1 Open Profile

Profiles can be exported and saved, then imported into a different product. To open a previously saved profile:

- 1. Select File then select Open Profile.
- 2. Navigate to where the profile is stored.
- 3. Select the file and press **Open**. A valid profile file then displays on the left panel, under Device Profile.
- 4. Select the intended profile from the left panel. Application displays all information as if it was that device.

#### NOTE: The profiles that show up grayed out are read only.

To clone the open profile see Section 3.4.3 on page 26.

#### 3.1.2 Exit

Select to close ScaleCore Connect application.



## 3.2 Administration Menu

Administration allows the setup of User Privileges. Selections are Normal User Mode and Administrator Mode. The current password must be available to complete this setup.



Figure 3-2. Administration Menu Selection

1. Select Administration then select User Privileges.

icuse select of	ser Privilege mode then enter Password.
	Normal User Mode
	○ Administrator Mode
Password:	Set

Figure 3-3. User Privileges

- 2. Select either Normal User Mode or Administrator Mode.
- 3. Enter the password and press

## 3.3 Communications

Communications allows the selection and configuration of the stream ports.

Set

File Administration	Communications P	rogram Help
Connected Devic Configure Device Profiles Select Stream Port		ice
Configuration Load Cells Calibration Inputs / Outputs Monitors		Please Select a Device

Figure 3-4. Communications Menu Selections

To select the stream port:

- 1. Select Communications then select Select Stream Port.
- 2. Select the port to be used from the drop down.



Figure 3-5. Select Stream Port

3. Press **OK** to save and return to main page.



## **Configure Stream Port**

To configure communications stream ports:

- 1. Select Communications then select Configure.
- 2. Select the port to be configured and press Configure Stream

You         You <thyou< th=""> <thyou< th=""> <thyou< th=""></thyou<></thyou<></thyou<>	-
Parity: Data Bits Stop bits	
<u> </u>	
None     O 7 data bits     O 1 stop bit	
Odd 🖲 8 data bits O 2 stop bits	s
O Even	

Figure 3-6. Serial Port Setup

3. Enter the following parameters:

Parameter	Description
Baud Rate	Rate at which information is transferred through the port; Selections: 9600 (default), 19200, 38200, 57600, 115200
Hand Shake	Signals transmitted back and forth over a communications network in order to establish a valid connection between two stations; <i>Example: A hardware handshake uses dedicated wires like request-to-send</i> ( <i>RTS</i> ) and clear-to-send ( <i>CTS</i> ) lines in an RS-232 serial transmission; Selections: None, RTS/CTS, XON/XOFF (default)
Parity	Error detection technique that tests the integrity of digital data in the computer; Selections: None (default), ODD, EVEN
Data Bits	Number of bits used to represent one character of data; Selections: 7 data bits, 8 data bits (default)
Stop Bits	Indicates end of a character or of the whole transmission; Selections: 1 stop bit (default), 2 stop bits

Table 3-1. Serial Port Setup Parameters

- 4. Press **OK** to save and return to Communication Setup.
- 5. Press **OK** to return to main page.



## 3.4 Program Menu

Program is used to program the application code, acquire a profile from a connected device or clone a profile from another connected product.

File Administration Com	munications	Program	Help	
Connected Devices Device Profiles Configuration Load Cells Calibration Inputs / Outputs Monitors	Auto Connect	Program A Acquire P Clone Pro	App Code rofile from Device file to Device	Please Select a Device

Figure 3-7. Program Menu

### 3.4.1 Program App Code

Program App Code is used to update the ScaleCore firmware on a connected device.

IMPORTANT: Program App Code should only be accessed by a trained dealer or under the direction of the Rice Lake Weighing Systems Customer Service.

🛃 Program App Code		×
	Step #1	
	Go To Bootloader	
	Step # 2	
	Send File	
		OK Cancel

Figure 3-8. Program App Code

- 1. Select **Program App Code** from the **Program** drop down menu.
- 2. Press **Go To Bootloader**, application switches to the terminal mode screen and displays the bootloader menu.

\* If the terminal mode screen displays strange characters, change the baud rate to 38400. See Configure Stream Port on page 24 to change the baud rate. Once the baud rate has been changed, make sure cursor is in the terminal screen and press the "R" key to refresh the terminal screen. The bootloader menu will display.

- \* If the unit shuts off after pressing the Go To Bootloader button, press the power key to restart the unit and the bootloader menu will display on the terminal screen.
- 3. Press Send File , a file dialog box pops-up.
- 4. Select an app code file from the file dialog box, press **Open**, app code file is sent to the target device.

#### 3.4.2 **Acquire Profile from Device**

ScaleCore Connect will acquire the profile from an attached device.

1. Select Acquire Profile from Device from the Program drop down menu.

🔬 Acquire Profile	X		
Busy	Acquire Profile  Successfully Acquired Profile.	Please Save Profile Look In: Documents Adobe Adobe Scripts	▼ a A B B C C C C C C C C C C C C C C C C C
		Bluetooth Exchange Folder bookmarkbackups Carbonser Dosificadores Corel Custom Office Templates	My Digital Editions My Music My Palettes My Pictures My RoboHelp Projects
		File Name: Files of Type: TEXT FILES	Save Profile Cancel

Figure 3-9. Acquire Profile

2. When prompted save the file to desired location.

#### 3.4.3 Clone Profile to Device

- 1. Select Clone Profile to Device from the Program drop down menu.
- 2. Select the Profiles to clone to the Target Devices.

Clone Profile to Device			×
Clone a Selected Profil	e to a Se	elected Target Device.	
Profiles		Target Devices	
Profile 1	TO:	MSI7000	-
×		_	

Figure 3-10. Clone Profile to Device

- 3. Press Clone
- 4. Once profile is successfully cloned to the target device, the target device is configured based on the cloned profile info.

NOTE: A user can acquire a profile from Device A and saved it as Profile\_A then select this Profile\_A and clone it to Device B. B. Device B will now behave like Device A.



## 3.5 Device Profiles

A device profile contains the entire settings of a device, such as load cell calibration, communication settings, setpoints, relay, print string and other settings.

## 3.6 Maintenance

- 1. Select Load Cells.
- 2. Select Maintenance.

File Administration Con	nmunications Program Help	
Connected Devices Device Profiles	Maintenance Settings	MSI7000 , id = 0
Configuration Load Cells General	Load Cell Num	ber:1
Zero, Standard Total Math Maintenance Cal Records	Lift Count: 634 Load ( 1	Overload Count: 543 :ell Number
Calibration Inputs / Outputs Monitors	Thresholds as percentage	of capacity. 0=0.5%, 1=1%, 100 = 100% etc Drop Threshold 1
	0	Commit

Figure 3-11. Maintenance Settings

3. Enter the following parameters:

Parameter	Description
Sensor ID	Select the sensor ID from 1–4
Lift Threshold	Select the lift threshold number from 0–100 (in percentage of capacity, 0=0.5%, 1=1%, 100=100%)
Drop Threshold	Select the drop threshold number from 0–100 (in percentage of capacity, 0=0.5%, 1=1%, 100=100%)

Table 3-2. Maintenance Settings Parameters

4. Press **Commit** to save.

## 3.7 Stream Print String

## Listeners

The Listeners feature controls the machine to machine communications interfaces.



ScaleCore Connect	
File Administration Communications Program Help	
Connected Devices Device Profiles Configuration Load Cells Calibration Inputs / Outputs Setpoints Stream Print String       Stream Print String       Format Editor         Listeners       Print String       Format Editor         Destination ID 255       Istener Number       Destination ID 255         Stream Type       UARTO       Interval in 50mSec 20         Control Output Mode       Command       Interval in 50mSec         Note: Control Output Mode of Print String Can Override Listener's Control Output Mode.	0
	Commit

Figure 3-12. Listener Settings

- 1. Select Inputs / Outputs, then Stream Print String.
- 2. Select the Listeners tab.
- 3. Make any necessary changes in the following parameters:

Parameter	Description
Listener Number	Select stream listener number from 0–2
Destination ID	Select the ID assigned to the stream listener from 0–255; 255 indicates broadcast ID, it is for every device that attached
Sensor ID	Select the sensor the listener will observe from 1–5
Stream Type	Select the type of this stream listener
Interval (50 ms)	Select interval value from 0–255 Example: 20 means 20x50 ms = 1 second.
Control Output Mode	Select the mode for the listener

Table 3-3. Listener Parameters

4. Press **Commit** to save.



## **Print String**

The edit print string, allows the mode, interval and composite for a listener to be configured. The mode can be configured to print on command, on stable load, continuous, or it can be disabled. The print composite allows the combination of the configured print formatters to produce a great deal of information in a single print.

Connected Devices Device Profiles	Stream Print String Settings	MSI7000 , id = 0	
Connected Devices Device Profiles Configuration Load Cells Calibration Inputs / Outputs Setpoints Stream Print String Monitors	Listeners Print String Listener Number 0 Control Output Mode Continuous Interval in Seconds 1 Composite Formatters 12345	Format Editor           Formatters           [1]: R7S0T7V_U_Mrn           [2]: R7S0T1V_U_Mrn           [3]: R7S0T0V_U_Mrn           [4]: R7S0T3V_U_Mrn           [5]: R9S0T2V_U^ TTL^*rnn           [6]: R13S0T8V_M_rn           [7]: R6S0T7/rn           [8]: Carriage Return and New Line	
	Clear Simulated Print String Outp 12346	Add to Composite Formatters	Preview Composite Formatters

Figure 3-13. Print String Settings

- 1. Select Inputs / Outputs, then Stream Print String.
- 2. Select the Print String tab.
- 3. Make any necessary changes in the following parameters:

Parameter	Description
Listener Number	Select stream listener number from 0–2
Control Output Mode	Select the output mode for the print string; Disabled, Command, Stable Load, Continuous
Interval in Seconds	Select the interval period on continuous output from 0-255, 0 (fastest) up to 255 seconds
Composite Formatters	Add formatters from list; preview as needed; Clear to reset selected formatters

Table 3-4. Print String Parameters

4. Press **Commit** to save.



## Format Editor

The format editor function allows customization of the formatted print information that a ScaleCore device can produce. Custom print formatters can be generated with the help of the custom interface within the format editor.

Connected Devices Device Profiles Configuration Load Cells Calibration	Stream Print	String Setting	gs Format Edit	or r Number 1	•	MSI6360 , id=	0	_	
Inputs / Outputs Setpoints Stream Print String		Weight	Name	Text	Unit	Mode	Date	Time	
Monitors		Sign	Status	Space	Сг	Lf	STX		
	Formatter	R7S0T7V_U	_Mrn					Clear	
	Preview	Click ab	ove buttons to i	nsert tokens i	nto print str	ring formatter.		Help	
			Prev	iew Formatter	Simulated	Output			
								Commit	

Figure 3-14. Format Editor

Use the buttons to create the string or type it into the formatter box. The maximum length for this print string is 18 characters.

#### NOTE: All characters are case sensitive.

Character	Definition	Explanation
R##	Right justify length of next field	R5 means next item maximum width is 5 characters with padding leading spaces if needed; R0 means variable width without justify; It is only valid for one next field; ## maximum value is 12.
L##	Left justify length of next field	L5 means next item maximum width is 5 characters with padding trailing spaces if needed; L0 means variable width without justify. It is only valid for one next field. ## maximum value is 12.
S##	Defines sensor for fields V, I, M, N and U	S05 means that fields V, I, M, N and U will output values from sensor 05; Once S## is specified, following V, I, M, N and U fields are referred to current S## until new S## is specified; ## maximum value is 15. <b>NOTE: If sensor is not specified, default sensor is Sensor#0</b>
T#	Defines data type	<ul> <li># represents the type of data that trailing characters will output: 0==GROSS, 1==NET,</li> <li>2==TOTAL, 3==TARE, 4==ZERO, 5==PEAK, 6==ADC COUNT, 7==CURRENT MODE.</li> <li>8 == Total count</li> <li>Example, T1 means following value field is for NET weight value;</li> <li>NOTE: If data type is not specified, default type is GROSS</li> </ul>
V	Outputs real value	Output value is based on leading print string data type T# from sensor ID field S##;
1	Outputs integer value	Output precision is based on configured count-by d;
A	Outputs absolute value	See Table 3-5 on page 30
М	5-character string of specified data type	Output character field representing data type T#; character field is fixed at five characters with trailing padding spaces if needed; Example, T1 is NET mode; M field will print NET with two trailing blank characters T6 is ADC COUNT; M field will print ADC C with no trailing blank characters
m	First character of specified data type	Output character field representing data type T#; character field is fixed at one character; Example, T1 is NET mode; m field will print N T6 is ADC COUNT; m field will print A

Table 3-5. Parameter Print Characters



Character	Definition	Explanation
N	Name of sensor	Output name of sensor S##; Name is defined by NOTE: Field can be controlled by R## and L##
U	2-character string of current unit of specified sensor	Unit output is always two characters; kg=kilogram, lb=Pound, T =Metric Ton, TN=English Ton
u	First character of current unit of specified sensor	Unit output is always one character
Р	Polarity of specified sensor	Output -? if negative; Output blank space if positive
t	Status of specified sensor	Output M= in-motion, Z=COZ, O=overload or underload; Blank space outputs if none
d#	Outputs date	# represents the date formatting: 0==yyyymmdd, 1==dd/mm/yy, 2==mm/dd/yy, 3==dd/mm/yyyy, 4==mm/dd/yyyy, 5==yyyy/mm/dd NOTE: Date can only be set on ScaleCore products that have internal clock circuitry and software.
h#	Outputs time	# represents the time formatting: 0==hhmmss, 1==hh:mm, 2==hh:mm:ss, 3==hh:mm AM/PM, 4==hh:mm:ss AM/PM NOTE: Time can only be set on ScaleCore products that have internal clock circuitry and software.

Table 3-5. Parameter Print Characters (Continued)

Character	Formatting
-	Space character
r	Carriage return
n	New line feed
٨	String quote (^ABC D^ outputs "ABC D"
S	Start of text (STX)

Table 3-6. Formatting Print Characters

#### Examples:

#### String: R7S0T0V\_U\_Mrn

- R7 Right justify next output with 7 characters width
- S0 All values extracted from Sensor 0
- T0 All data extracted as GROSS mode
- V Output data value precision based on count-by
- \_ Space
- U Output 2-character string unit
- \_ Space
- M Output 5-character data type string
- r carriage return
- n line feed

Output: **12345 lb GROSS** <<u>cr</u> LF>

String: S0T0MR7V\_Urn Output: **GROSS** 12345 lb <<u>cr</u> LF>

## String: S0R4NT0R7V\_U\_Mrn

Sensor name is "WestSide." Print string only outputs "West" because R4 limits the N output to 4 characters. Output: West 12345 lb GROSS <cr LF>

String: ^Crane:1 ^S0T0R7V\_U\_Mrn 1st field is a string "Crane:1 ". Output: **"Crane:1" 12345 lb GROSS** <cr LF>

Standard Rice Lake Serial Scale String: sPR7S0T7Aumtrn







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