



Operators Manual



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RF DataLink Setup

Sequence of Operations

After installing your software, please follow this section to setup the RF DataLink for use. It is important that you follow along with this sequence.

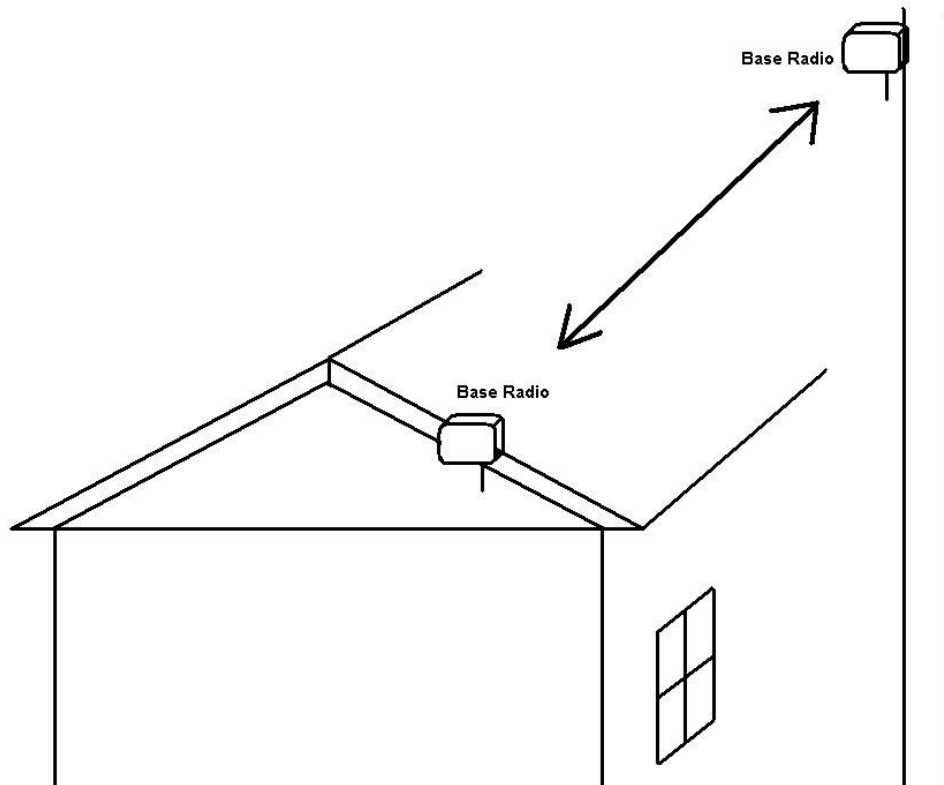
Registering the Software

Once the software has been installed, it must be registered. Contact Digi-Star to obtain your registration code. The code is case sensitive; all letters must be entered in upper case.

Radio Installation and Setup

When installing the base radio; make sure the “ram mount” is fully extended away from the mounting surface.

For greater radio communication and range mount the radio in the highest position that it is visible from the ground or were the mixers are being loaded. Mount the radio in either position like the illustration. On the corner of the office or on a utility pole.



Radio Antennas

The location of the antennas is critical. Check the installation of the antennas and the antenna location.

Indicator and Truck Mounted Antenna: Truck Mounted Antenna, mount the antenna outside, on the top of the cab, in the center of the roof. Do not modify the cable between Truck Mounted Antenna and the indicator.

Yes No Are any building near the Base Station Antenna metal?

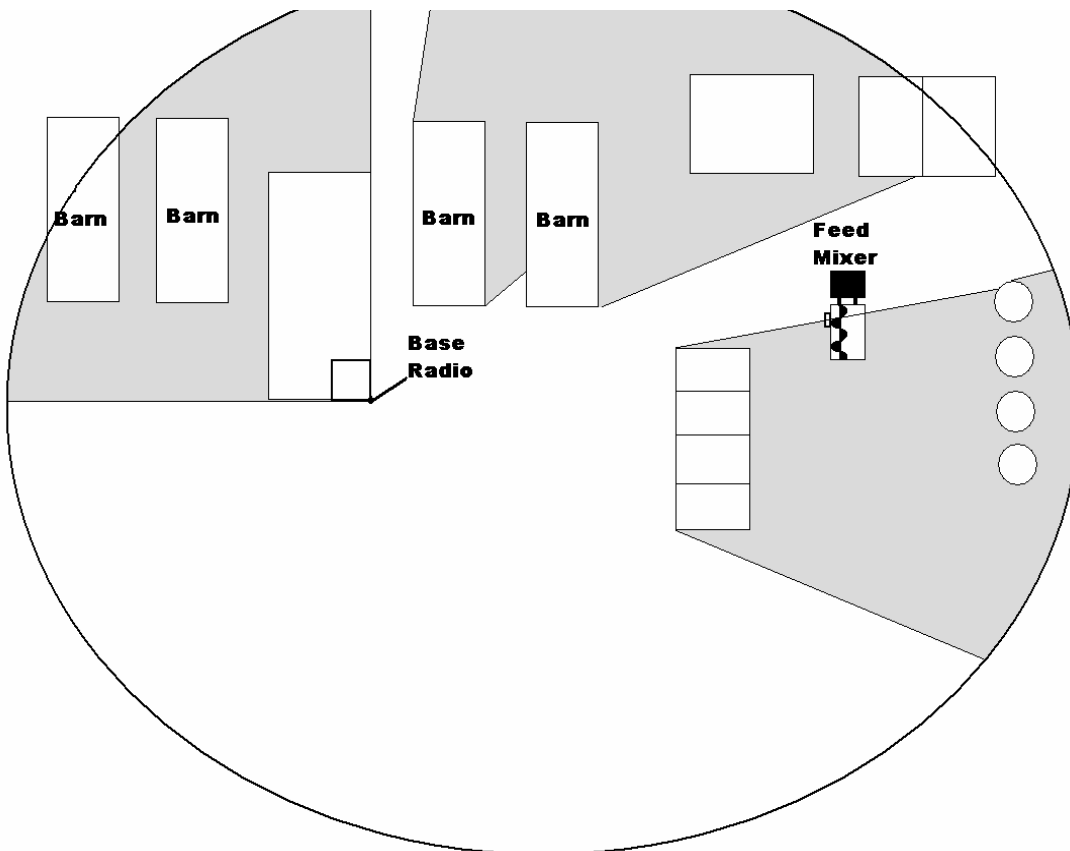
Yes No Are any metal structures located between the Base Station Antenna and the mixers?

Yes No When standing at the Base Station Antenna, can you see the mixer?

Yes No Have any of the antenna cables been modified?

Radio Range:

The picture below shows how radio range would be affected by obstructions like metal barns or earth. The gray areas show poor radio signal. If the radio is mounted higher, this may improve radio range.



The Fresnel Zone can be thought of as a football-shaped tunnel between two sites that provides a path for RF signals.

In order to achieve the greatest range, the football-shaped path in which radio waves travel must be free of obstructions. Buildings, trees or any other obstacles in the path will decrease the communication range. If the antennas are mounted just barely off the ground, over half of the Fresnel Zone ends up being obstructed by the earth resulting in significant reduction in range. To avoid this problem, the antennas should be mounted high enough off the ground so that the earth does not interfere with the central diameter of the Fresnel Zone.

Minimal height of base radio:

Range Distance	Height
1000 ft (305 m)	15 ft (4.6 m)
1 Mile (1.61 km)	25 ft (7.6 m)
1.5 Miles (2.42 km) or more	45 ft (13.7 m)

If you do not have enough cable from the computer to the radio there are different cable lengths that Digi-Star offers, or you would like a higher powered antenna, contact Digi-Star.

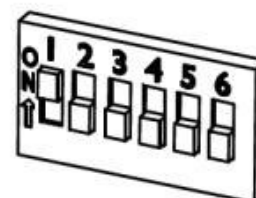
Standard length is 50 ft / 15.25 m (RS-232). Extended length is 150 ft / 45.75 m (RS-422) or custom lengths are available (150+)

Radio Interference

There are many types of wireless networks or (WIFI) and some can interfere with the DataLink radio. If DataLink is still showing radio interference, check the WIFI network number. Changing this number can correct for radio interference. For further information about WIFI, check the website of the brand of your radio. 802.11 2.4GHZ use channels 1 – 6 and 13 & 14.

Standard Range Setup

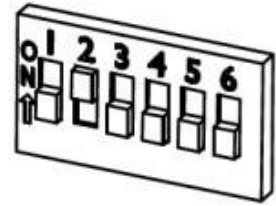
When using the standard range kit, connect the DB9 serial connector to either a serial port on the PC or use the USB to Serial adapter included and connect the 12VDC power supply to the cable. The base radio is shipped from Digi-Star setup for standard range. The switch settings on the radio are set to the picture to the right: Verify this if you are not able to communicate with the base radio



Standard Range (RS-232)

Extended Range Setup

If you are using the extended range radio kit (RS-422) you must go to System, then Defaults, and select [Radio Settings]. Under Base Radio Type, select [Extended Range Base Radio (RS-422)]. RF Datalink will then pause while looking at the radio for the new settings.

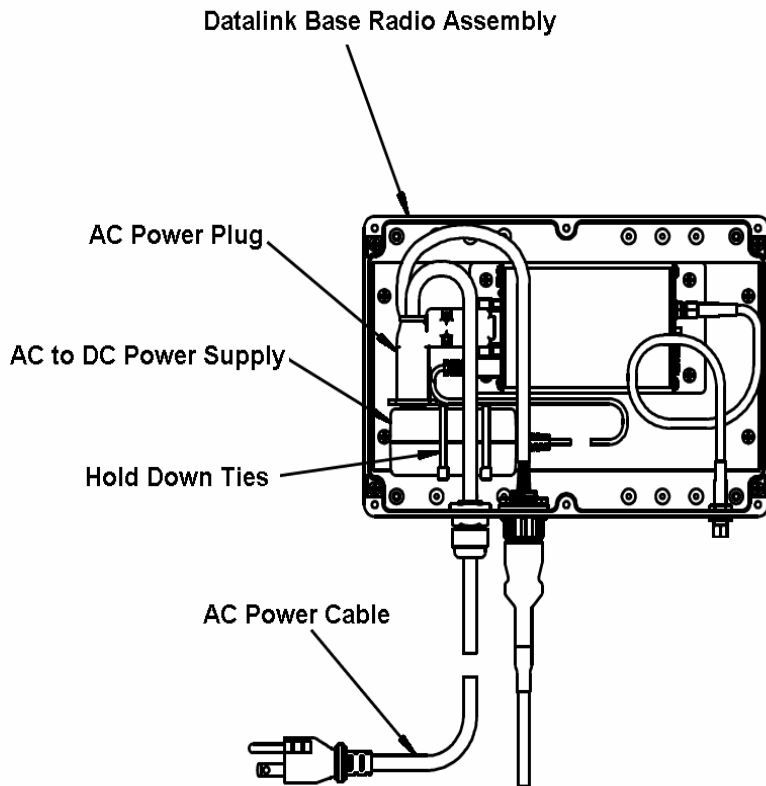


Extended Range (RS-422)

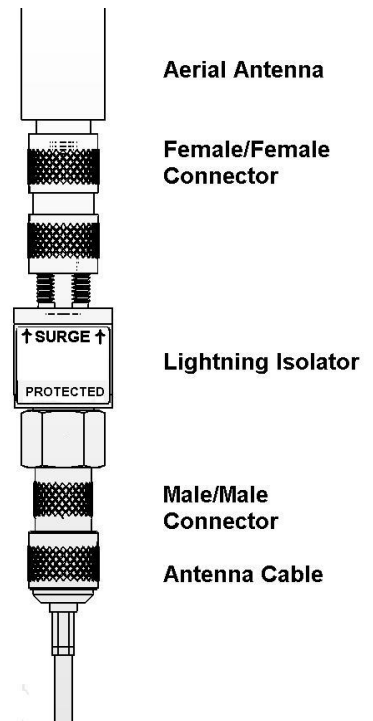
Next open the housing of the base radio. There is a bank of dip switches on the right side,

Set switches as the picture on the right:

Install the AC/DC power transformer into the base radio box and run AC power into the unit as shown. When attaching the female plug to the power cord, remove green ground wire and attach either of the remaining two wires to either terminal. AC/DC adaptor is not polarized.



Antenna Assembly



USB Black Box Installation

Plug in the Black box into a USB port. Windows will detect the Black box and at this point Insert the driver CD. Follow the Windows prompts.

Open the end cover of the Black Box and install the wires as follows:

WIRE COLOR	CONVERTER TERMINAL BLOCK
BLACK	EITHER GND
GREEN	TDA-
WHITE	RDA-
ORANGE	RDB+
YELLOW	TDB+

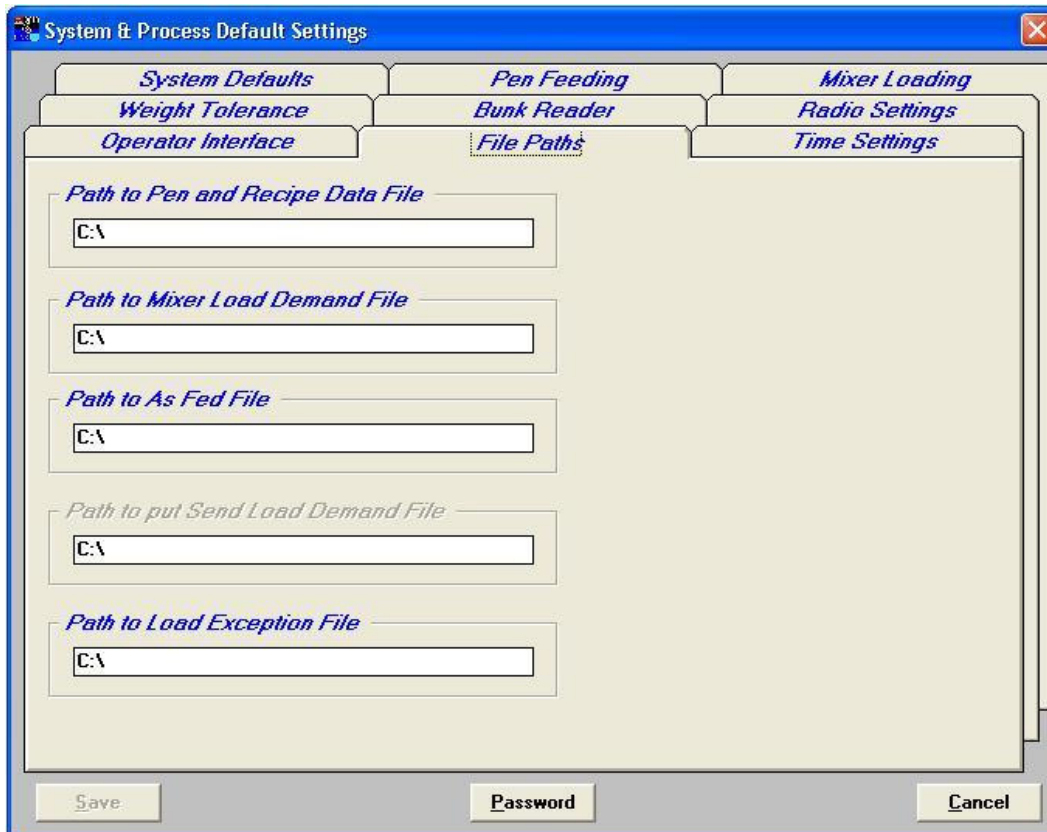
Passwords

Many of the settings under the System, Defaults menu are critical to the overall operation of the RF DataLink program. To protect these settings, you have the ability to set a password that will prevent unauthorized access to these settings. Once a password has been set on any default screen, it is set for all default screens.

As with all passwords, please be sure to record your password in a safe place and guard it from other users. Should you lose or forget your password, you will have to call Digi-Star® to have it reset.

Setting the File Paths

RF DataLink shares files with other software. As such, each program must know where to send and where to look for these files.



To set the File Paths, from the main menu select [Systems], [Defaults] and [File Paths]. This will display the File Path screen.

- 1. Path to Pen and Ration Data Files** - this is the data that is transferred from the third party software or TMR Tracker. Ration mixes and pen calls.
- 2. Path to Mixer Load Demand File** - Not used in this application.
- 3. Path to As Fed File** - this is the data that is transferred from the RF DataLink to the third party software. Completed Ration mixes and pen feedings.
- 4. Path to put Send Load Demand File** - this option will send a file out to a mill demand to show the total load size of the next load sent to the mixer.
- 5. Path to Load Exception File** - this is the error log for any weight tolerance that you set. This data does not have to be transferred from the PC running the RF DataLink program.

If you are not using a network, the path settings for 1 and 3 would be set to C:\. If you are using a network, set the paths to whatever your network drives have been set too.

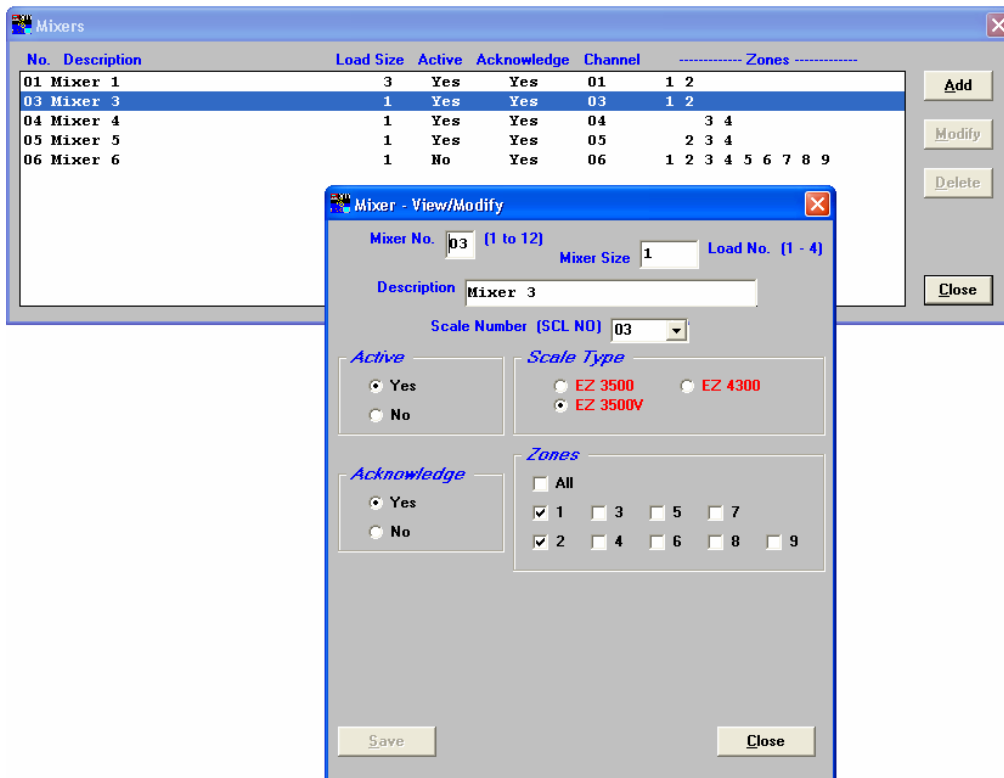
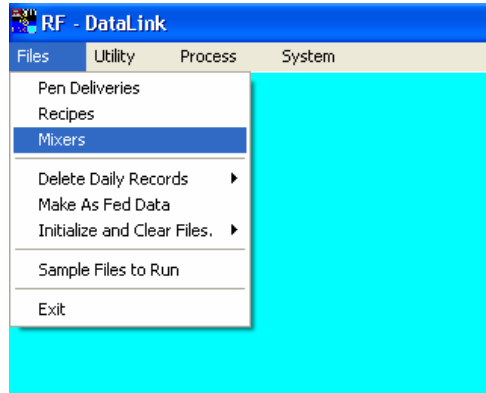
If you setup a file such as ERROR above, that Folder must exist before you can save the settings. The RF DataLink will not create the Folder for you.

When complete, click [Save].

Entering Mixer Data

Adding Mixers

To access the Mixers screen, select Mixers from the File Menu. This will display the Mixers screen. In a new installation, the Mixer screen will be blank.



Select the Add button to add a new mixer. Enter the Mixer number 1-12 (this number should match the Scale Number).

Mixer Number – a two-digit number to identify the Mixer.

Description – a detailed Mixer description. The first letter of this may be displayed on the Process Screen.

Radio Channel – the radio number will be set on the EZ indicator. To view or change the number use the direct access number (231). Press (Select) to change the number, and press (On) to save. Make sure if you are using two or more mixers that you don't use the same radio ID.

Mixer Size – Enter the lbs/Kg per cubic foot/Meter or enter the load number. The load number is used with Bunk reader programs.

Active - to signify that the Mixer is available for feeding, click on [Yes] in the Active box. Clicking on [No] will make the Mixer un-available for loads or feeding.

Acknowledge – Acknowledge – This option is used to send a message to the scale if the operator would like to receive another load. If the operator does not press the Tare key within 10 seconds at the scale, Datalink will continue to other mixers.

To save your entries, click [Save].

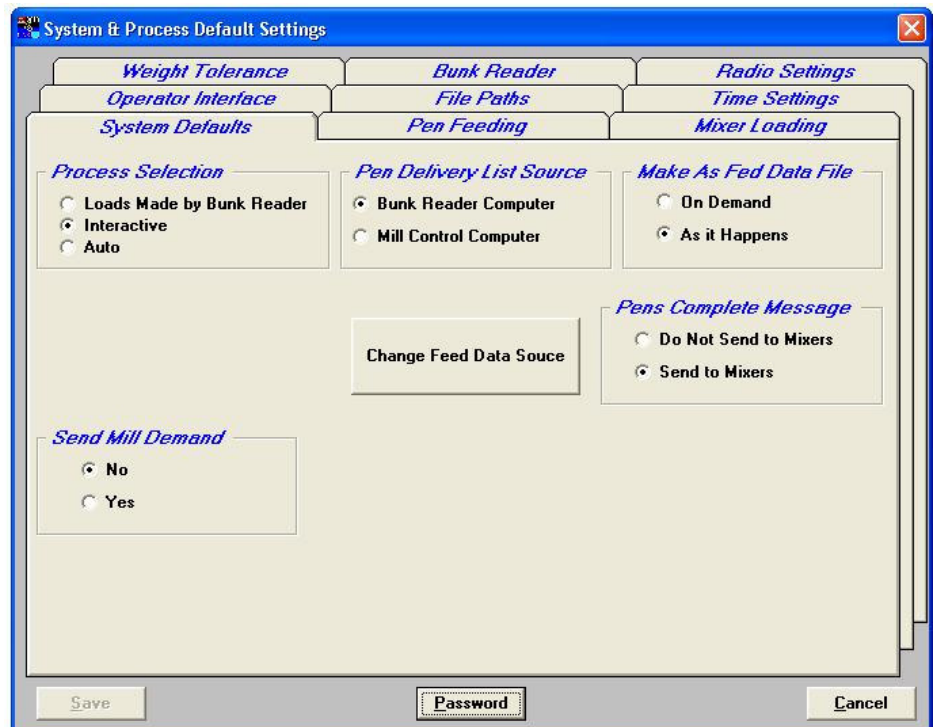
If you are using static mixers/dump boxes and delivery wagons, go to the default setting to change this setting.

Determining the System Defaults.

The system defaults control how you process your feedings. These settings can help to further optimize your feeding process. Please take some time to read and understand these settings and their affect on your feeding process.

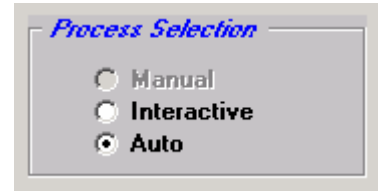
To set the System Default Settings, from the main menu select [Systems], [Defaults], and [System Defaults].

The system defaults screen contains all the choices available to change the manner in which the RF DataLink processes your feedings.



Process Selection

Interactive – this process selection allows the input of an external load demand to make loads for your feed mixers. This external demand will typically be generated from a mill software package. This selection also allows an operator at the PC running the RF DataLink to manually enter loads.



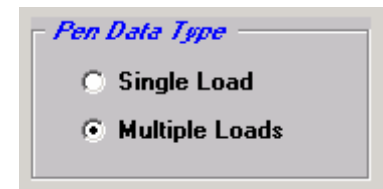
If you do not have a mill software package or do not want to interface the mill and the RF DataLink, you must have an operator running the RF DataLink in order to use this selection.

Auto – this process selection will automatically make and send loads to your mixer without operator intervention. You will still have the ability to send manual loads if you elect to turn that option on. This selection allows the RF DataLink to operate independent of user intervention or input.

Notes: [Auto] is the typical selection for most installations. Manual is not an available selection. When you have completed your entries, click [Save].

Pen Data Type

Single Pen – this mode will send a single pen load at a time to your mixer. One pen, one load. This mode can be used if your mixer is undersized for your operation and cannot hold enough feed to process more than one pen at a time. (This mode is the least efficient.)



Multiple Pens – this mode will send multiple pens to your mixer based on your vehicles size and how much of a particular ration it can hold. Multiple pens, one load. (This mode is the most efficient and is the typical setting for most installations.)

When you have completed your entries, click [Save].

Make As Fed Data File

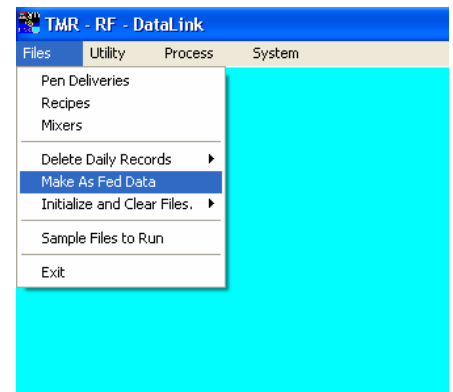
The As Fed Data File is the completed loading and feeding data that is transferred to third party software. This file can be sent in two ways;



On Demand – this selection sends the data file on a demand basis. When a completed load is received by the RF DataLink program, the file is stored until a demand for the file is received. The file is then written to the file path set for the As Fed File. The demand is triggered by selecting Make As Fed File from the File main menu.

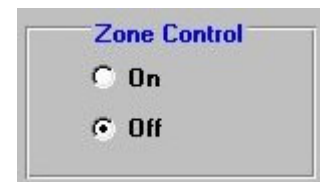
As it Happens – this selection writes the data file as it is received. When a completed load is received by the RF DataLink program, it is immediately written to the file path set for the As Fed File.

When you have completed your entries, click [Save].



Zone Control

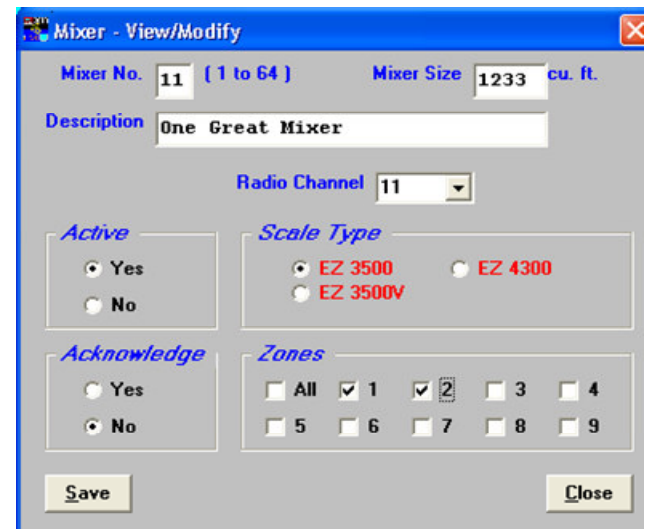
This setting determines whether the ability to set up zones and assign pens and Mixers to zones is turned on.



The Zone Control allows you to split your pens into separate Zones and to assign specific feed mixers to those Zones. If you set this to On, you must include the Zone field in the pen data being sent. Additionally, you must set the Zone for the Mixers. To access that setting, from the main menu, select [Files] and [Mixers]. If you have already setup Mixers in this file, click on Modify to assign the Zones. In the example shown, the Mixer 11 has been set to service Zones 01 and 02.

By setting up Zones, you limit the pens assigned to a Mixer to only those assigned to its Zone. You can override this setting by sending a load outside of the Mixer's Zone manually. The RF DataLink will ask you to verify that you want to send a load outside of the Mixers Zone. If you select [Yes], the load will be sent.

When you have completed your entries, click [Save].



Send Mill Demand

This option is only used if the site has a mill batching software program that will import batch load sizes. This option will export the load size that was sent to the next ready mixer.



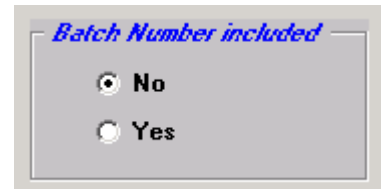
Pen Delivery List Source

This option sets the source of where RF DataLink will look for the pen delivery information. From either a bunk reader program or a mill program. This option will have different formats in how it will read in the pen delivery information. Be sure to set this correctly.



Batch Number Included

This option will be used if the third party program sends over a batch number in the W2T_Pen.dat file.

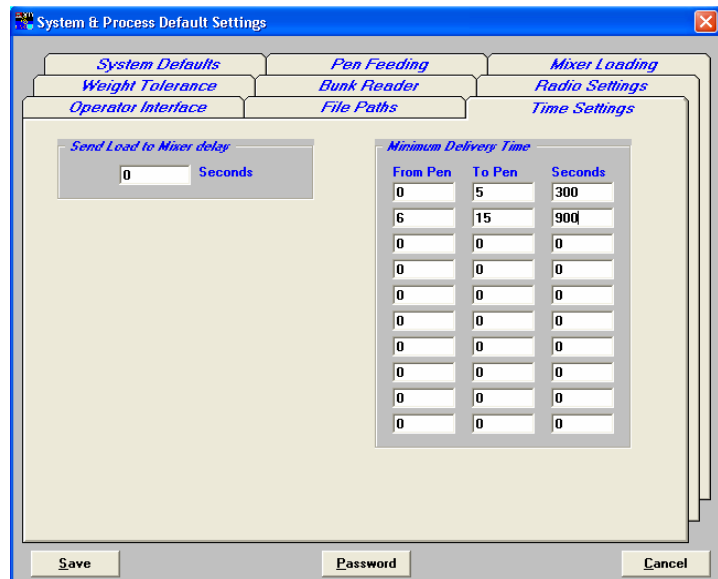


Timing

The Timing Settings allow you to optimize the efficiency of the radio communications within the RF DataLink program.

The RF DataLink continuously searches for Mixers. To optimize this process you can take into consideration the time required for a Mixer to service the pens.

Example: It takes your operator 10 minutes to load the ration, 5 minutes to mix and another 5 minutes to drive to pen 3. That being the case, you can tell the RF DataLink program to ignore the Mixer for the initial 20 minutes that it will take just to get to the pen.



Setting the Timing

To set the Timing, from the main menu select [Systems], [Defaults], and [Timing].

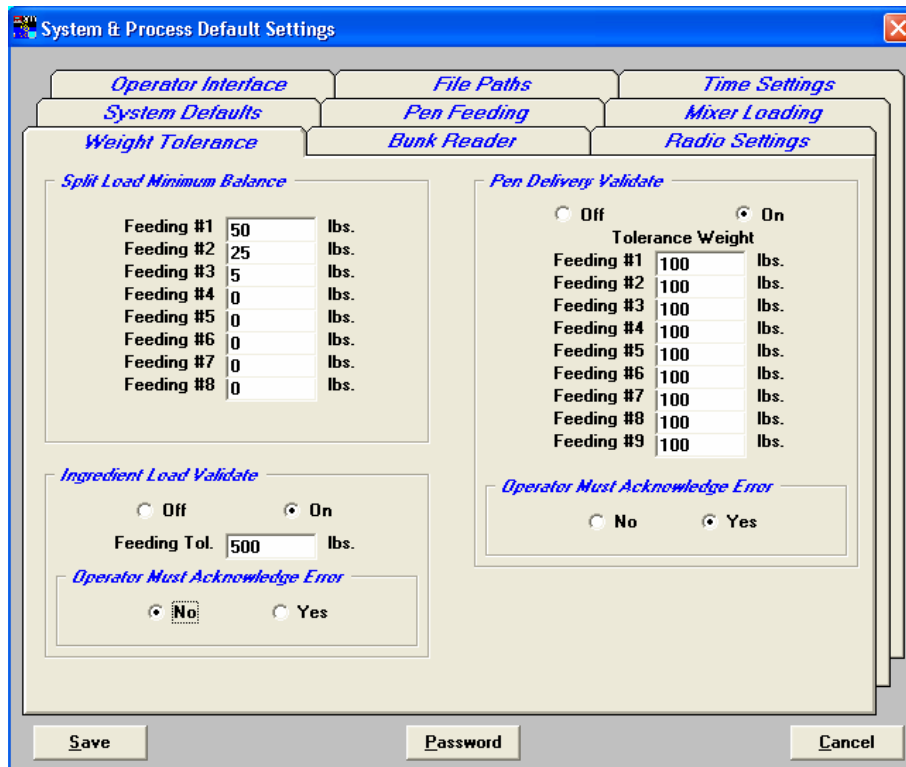
Enter the pen numbers and the time delay in seconds. In this example, the time delay for pens 0 to 5 is 5 minutes (60 seconds x 5).

These settings are optional and do not have to be used.

When you have completed your entries, click [Save].

Weight Tolerances

The weight tolerance settings allow you to establish an accuracy level for the loading and feeding of your rations and pens. This tolerance is applied to each ingredient in a ration and each pen in a load. The tolerance is then used to compare the call weight and the actual weight. If the result is more than the tolerance established, an error message is displayed showing the resulting error and an error log is created.



Pen Delivery Weight Tolerances

To set the Weight Tolerances, from the main menu select [Systems], [Defaults], and [Weight Tolerance].

To set the Pen Delivery Tolerances, first set the Pen Delivery Validate to [On].

To set the Tolerance Weight for the pen deliveries, select the feeding number and enter a tolerance in pounds. You can set different tolerance weights for each feeding.

Example: You can have a relatively large window (tolerance) for the 1st feeding of the day when the goal is to get feed in front of the animals, where you may have a much tighter window (tolerance) in the afternoon when the goal is to get as close to the total amount for the day as possible.

When you have completed your entries, click [Save].

Operator Acknowledge

This setting determines whether the error message showing the feeding error must be acknowledged by an operator before the RF DataLink program continues. If you select [Yes], an operator must acknowledge the error before the RF DataLink program will continue. If you select [No], the error message will time out after 10 seconds and the RF DataLink program will continue.

Either choice will write the error to an error log if you have turned on the Pen Delivery Validate.

When you have completed your entries, click [Save].

Ration Weight Delivery Tolerances

To set the Ration Weight Tolerances, from the main menu select [Systems], [Defaults], and [Weight Tolerance].

To set the Ration Weight Tolerance, first turn the Ingredient Load Validate [On].

To set the tolerance weight, enter the tolerance weight in pounds. This is a global setting that will apply to all ingredients loaded.

Example:

Tolerance = 500 pounds

Call weight = 4000 pounds

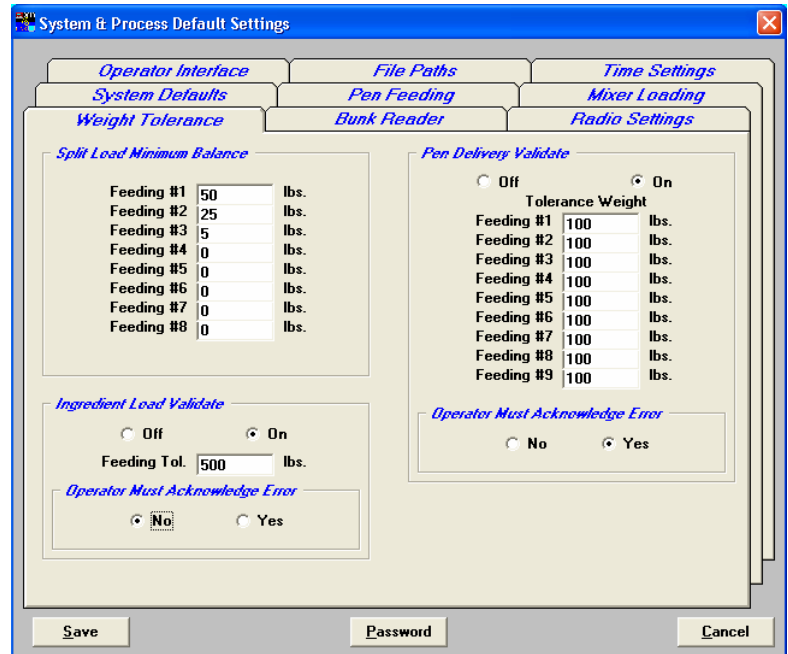
Actual loaded weight = 3600 pounds

Result = No error message

Actual loaded weight = 3400 pounds

Result = error message

When you have completed your entries, click [Save].



Operator Acknowledge

This setting determines whether the error message showing the loading error must be acknowledged by an operator before the RF DataLink program continues. If you select [Yes], an operator must acknowledge the error before the RF DataLink program will continue. If you select [No], the error message will time out after 10 seconds and the RF DataLink program will continue.

Either choice will write the error to an error log if you have turned on the Ingredient Load Validate.

When you have completed your entries, click [Save].

Split Load Minimum Balance

To set the Split Load Minimum Balance setting, from the main menu select [Systems], [Defaults], and [Weight Tolerances].

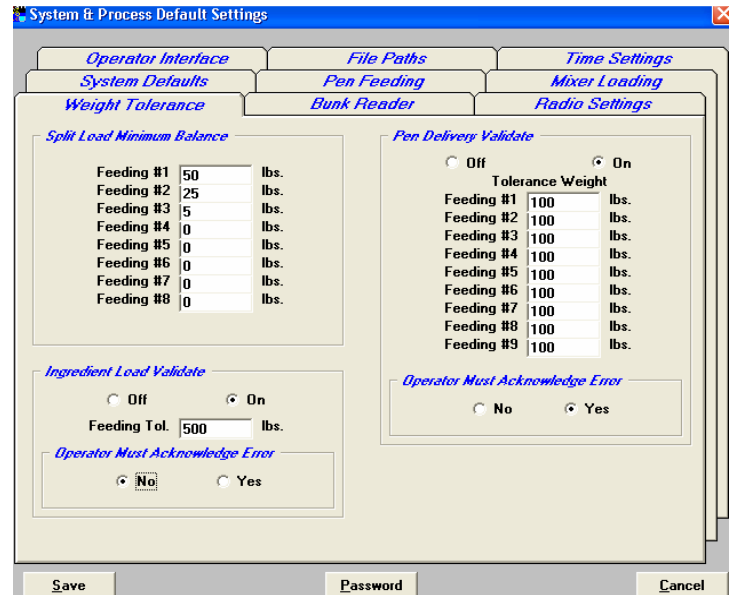
The Split Load Minimum Balance determines whether the remaining amount of a split load will be built

Example: You had a 4000-pound call weight to deliver to pen 1 and a split load occurred that left 200 pounds to be fed to pen 1. You could set the split load minimum balance to 300 pounds. In this case, the remainder of the call for pen 1 would not be fed.

This setting is typically set to 50 pounds.

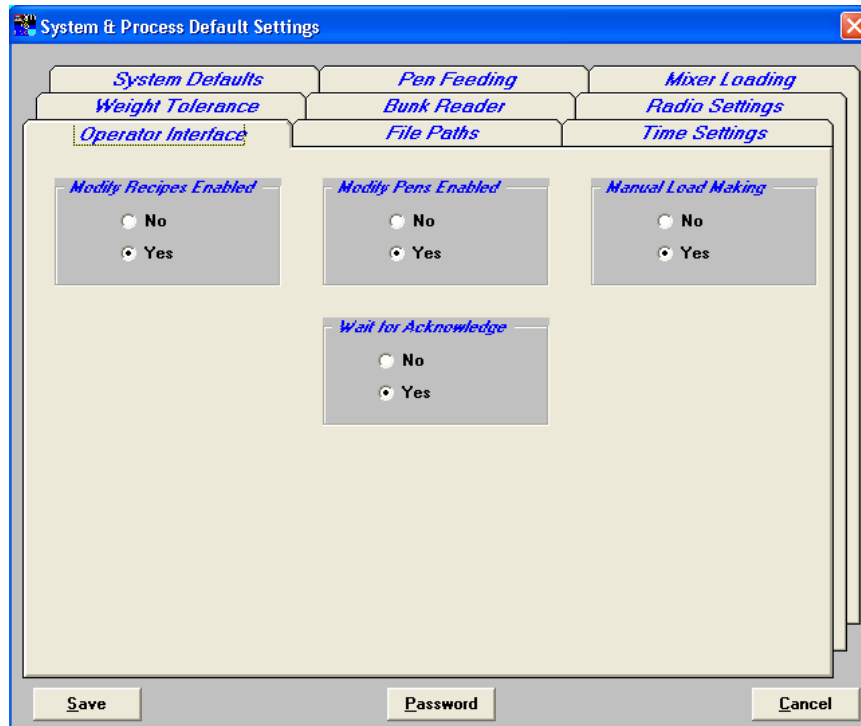
To set this, enter the amount in pounds that you want to set as your split load minimum. This setting is feeding specific. Repeat as needed for each feeding. Each feeding can have different settings.

When you have completed your entries, click [Save].



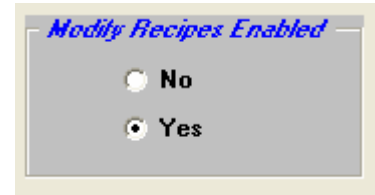
Operator Interface

To access the operator interface, from the main menu select [Systems], [Defaults], and [Operator Interface].



Modify Recipe

To set the Modify Rations Enabled Selection, from the main menu select [Systems], [Defaults], [Processing]. This will display the Process Settings screen.



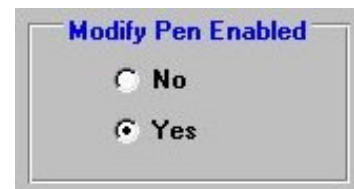
This selection determines whether you will allow rations to be modified in the RF DataLink program. If you select [Yes], you will be able to edit a ration.

Selecting [No] will not allow ration modification within the RF DataLink program.

Ration data is created and sent from third party software. If you edit a ration within the RF DataLink program, you will not be able to obtain accurate reporting on that ration unless you make the identical changes within third party software.

Modify Pen Enabled

To set the Modify Pens Enabled Selection, from the main menu select [Systems], [Defaults], [Processing]. This will display the Process Settings screen.



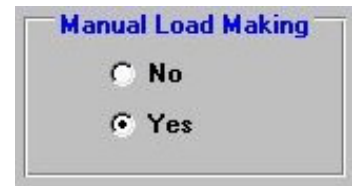
This selection determines whether you will allow pens to be modified in the RF DataLink program. If you select [Yes], you will be able to edit a pen.

Selecting [No] will not allow pen modification within the RF DataLink program.

Pen data is created and sent from third party software. If you edit a pen within the RF DataLink program, you will not be able to obtain accurate reporting on that pen unless you make the identical changes within third party software.

Manual Load Making

To set the Manual Load Making Selection, from the main menu select Systems, Defaults, Processing. This will display the Process Settings screen.

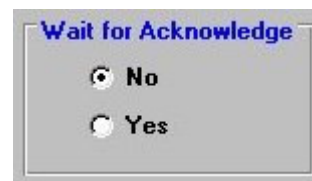


This selection determines whether you will allow a user at the RF DataLink to enter a manual load. In the Auto Process, the RF DataLink will automatically make your loads, if you select [Yes] to allow manual load making, an operator can override the RF DataLink and force the next load.

If you select No, manual load making is disabled.

Wait for Acknowledge

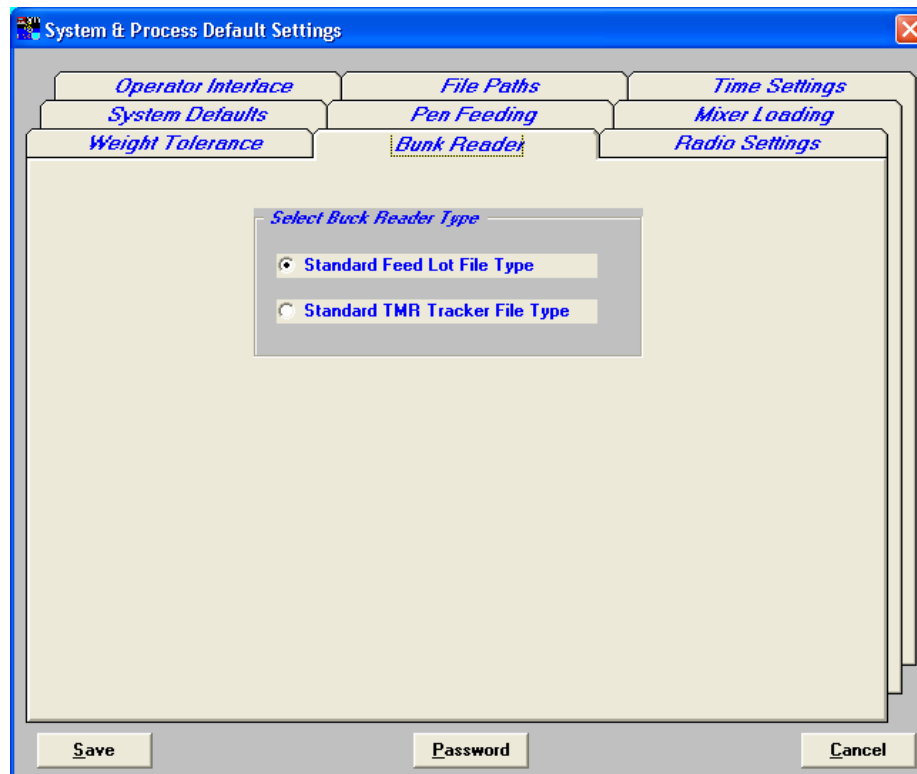
To set the Wait for Acknowledge Selection, from the main menu select Systems, Defaults, Processing. This will display the Process Settings screen.



This setting determines whether the RF DataLink program will wait for a response from an operator for any program-generated message.

If you select [Yes], an operator must respond to the message before the program will resume. If you select [No], the message will automatically time out after 10 seconds and the program will resume.

Bunk Reader

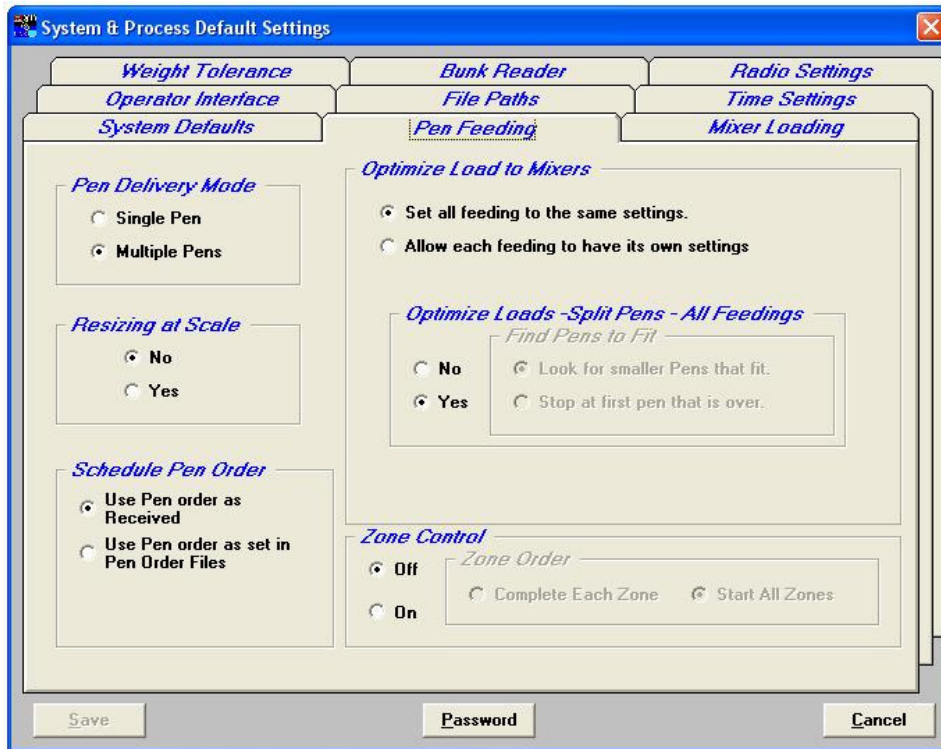


Select Bunk Reader Type

To set the Bunk Reader type, from the main menu select Systems, Defaults, and then the Bunk Reader tab.

This option will determine the format in how the data will be received into the RF DataLink software. You will only use the standard TMR Tracker File Type if you are using TMR Tracker software to make your batch and pen files.

Pen Feeding



Pen Delivery Mode

To set the Pen Delivery Mode, from the main menu select Systems, Defaults, and then the Pen Feeding tab.

Single Pen – this mode will send a single pen load at a time to the mixer. One pen, one load. This mode can be used if your mixer is undersized for your operation and cannot hold enough feed to process more than one pen at a time. This mode is least efficient.

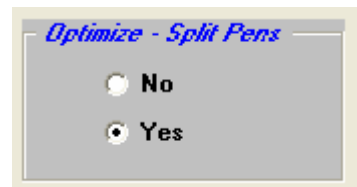


Multiple Pens – this mode will send multiple pens to your mixer based on your mixers size and how much of a particular ration it can hold. Multiple pens, one load. This mode is most efficient and is the typical setting for most installations.

Optimize Load to Mixer/Optimize-Split Pens

To set the Optimize/Split Pens Selection, from the main menu select Systems, Defaults, and then the Pen Feeding tab.

This setting determines whether the RF DataLink will split pens in order to fill your mixer to capacity. When you select [Yes], the RF DataLink program will maximize the load in your feed mixer and split pens as needed.



Example;

D3664

Maximum load size is 8,000 pounds of Ration 1

Pens and call weights: Pen 1 2,000

Pen 2 2,000

Pen 3 2,000

Pen 4 3,000

Pen 5 1,000

If you select [Yes], the load would total 8,000 pounds and would feed pens 1, 2, 3 and 1,000 pounds of the call weight for pen 4. The next load that is built would feed the remaining 2,000 pounds.

This setting is typically set at [Yes].

Find Pens to Fit

To set the Find Pens to Fit Selection, from the main menu select Systems, Defaults, and then the Pen Feeding tab.

This setting is only available if you have selected [No] at the Optimize Split Pens selection.

This setting determines how the RF DataLink will optimize your feeding when you elect Not to maximize the load in your feed mixer. The system can search the pen list to find smaller pens to get the load as close to the maximum as possible or can be set to stop at the first pen that will exceed the maximum load size.



Example;

Maximum load size is 8,000 pounds of Ration 1

Pens and call weights:

Pen 1 2,000

Pen 2 2,000

Pen 3 2,000

Pen 4 3,000

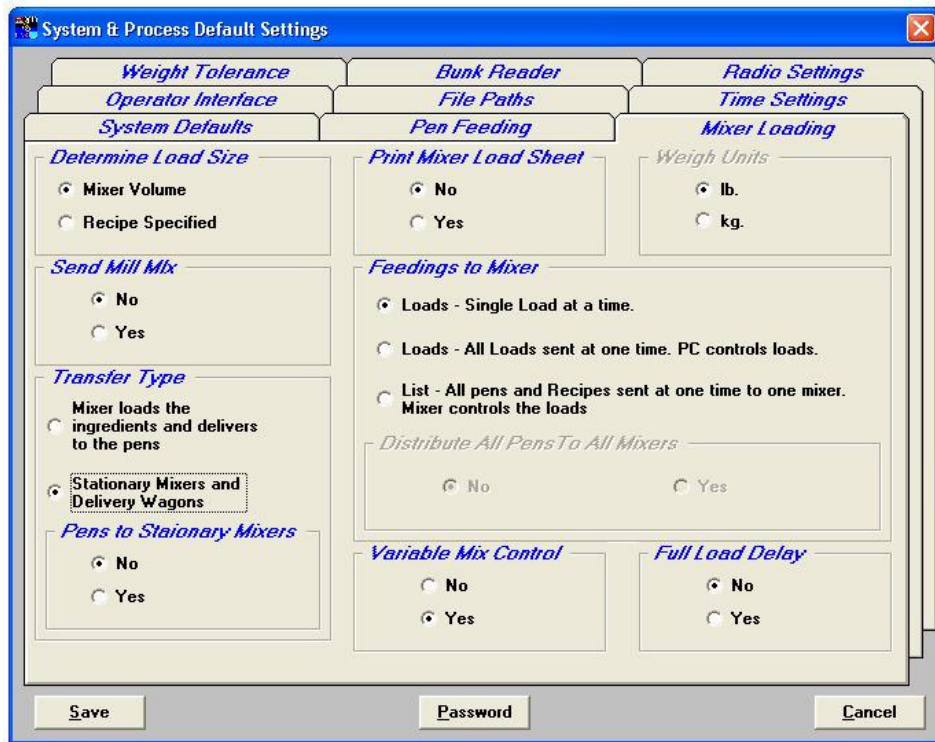
Pen 5 1,000

With the option set to **Look for smaller Pens that Fit**, the load would total 7,000 pounds and would feed pens 1, 2, 3 and 5.

With the option set to **Stop at first pen that is over**, the load would total 6,000 pounds and would feed pens 1, 2 and 3.

When you have completed your entries, click [Save].

Mixer Loading



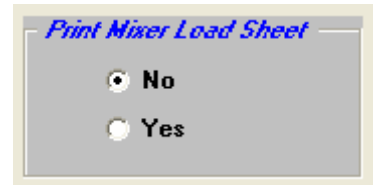
Print Mixer Load Sheet

To set the Print Load Sheet Selection, from the main menu select Systems, Defaults, and then the mixer loading tab.

This selection determines whether a Load Sheet will be printed for each load sent to the EZ Indicator in your mixer. The Load Sheet contains the ration loading and pen feeding information as loaded into the EZ Indicator.

This setting is typically set to [No].

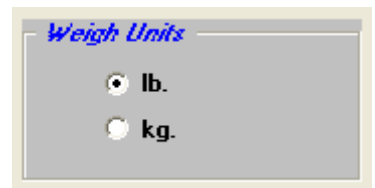
Note: You must have a printer connected to the PC running the RF DataLink in order to use this setting. If you select [Yes] and do not have a printer connected, the RF DataLink program will not process another load until you either connect the printer or change the setting to No.



Weigh Units

To set the Weigh Units, from the main menu select Systems, Defaults, and then the Mixer Loading tab.

This selection sets the weigh units of the RF DataLink to either pounds or kilograms. Be sure that the EZ indicator is set to the same weigh units.



Determining the Load Size for the Mixer

To set the Load Size, from the main menu select Systems, Defaults, and then the Mixer Loading tab.



This setting is used by RF DataLink to determine how much of a particular ration can be loaded into your feed mixer.

This setting must be set to Mixer Volume.

Feedings To Mixer

To set how the feedings are sent to the mixer, from the main menu select Systems, Defaults, and then the Mixer Loading Tab.

This option allows the PC operator to either send one load to the mixer at a time, send the entire feeding or feedings for the day to the mixer and allow the PC to only send the pens for that load, or send the entire feeding or feedings for the day to the mixer and have

the scale operator control what pens get the ration. This option is most useful if the ration is most likely not to change over the course of the feeding period. Or the feed mixer is out of range of the base radio for more than 2 loads.

When you select, [All Loads at one time. PC controls loads] or [All pens and Recipes at one time to the mixer. Mixer controls the loads]. The “Distribute All Pens to All Mixers” option will appear. This option is set to [No] if the mixers have zones assigned to them. It will only send the correct zone to the correct mixer if the option is set to [NO].

Transfer Type

This option determines how the feed data will be sent to either a stationary mixer/box or a standard mixer system.

When using the stationary mixer/box Datalink will send the ingredient loading information to the stationary mixer/box and the pen unloading information to the delivery mixer/box. When a load is complete at the stationary mixer/box, Datalink will send a message to the delivery mixer/box of what stationary mixer/box to pick up the load.

When using a stationary mixer/box and delivery mixer/box you also have an option to send what pens are in the load to be displayed at the stationary mixer/box.

Full Load Delay

This option is used with a bunk reader program. If the bunk reader program sends pens to Datalink when new pens are

available, Datalink will wait until there are pens to make a complete load to send to a mixer.

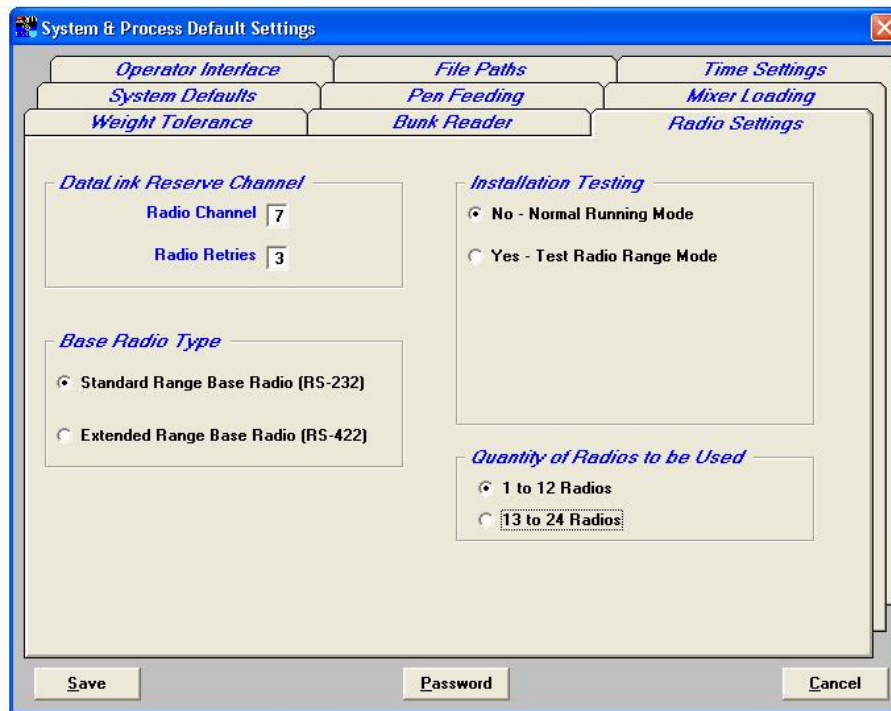
Variable Mix Control

This option is used when sending a mix time to the mixer/box.

When set to “Yes” Datalink will adjust the mix time based on a 10,000 lbs or kg load. If the mix time is set for 5:00 minutes and the load is 15,000, the mix time will increase to 7:30 minutes.



Radio Settings



Datalink Reserve Channel

Radio Channel – The radio channel will normally be set to 7. This number can be changed in case you have neighboring sites causing interference.

Radio Retries – This number is used to by the base radio recheck the EZ indicator to make sure that the feed data sent is correctly.

Base Radio Type

Standard Range Base Radio (RS-232) – Set this option if the base radio is the standard range.

Extended Range Base Radio – Set this option if the base radio is the extended range, the PC will have the “Black Box” signal converter.

Installation Test

This option is useful when testing the range of the radio system. To use this option set option to YES and save it.

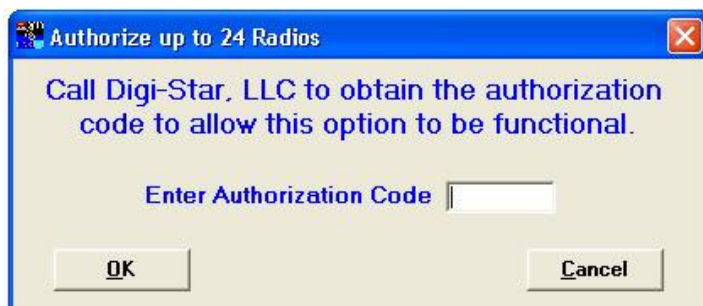
Next set the scale to test mode, to change this enter short cut number (457) and press (Select). Change the option to (Yes) by pressing (Select) and then press (ON) to save.

Operating the RF DataLink

Now send feedings to DataLink and start the process. DataLink will send feeding data to the scale. and then press the (Recipe) key to send the data back to the PC. This will repeat until the number of feeding are gone.

Quantity of Radios to be Used

You may use up to 24 channels. In order to use more than 12 channels you must contact Digi-Star for an unlock code. (920) 563-1400



Importing the Feeding Data

To import the feeding data, select Process from the main menu of the RF DataLink program. The program will automatically read the feeding data. A screen called Importing Pen File will be displayed while the feeding data is being read. When the file has been completed, the Importing Pen File box will be removed from the screen. The second window will now display the Feeding Number, Ration, Zone, Call Weight, Millmix and Externally Loaded amounts as shown:

The Call Weight is the total amount of that ration to be fed for that feeding.

Millmix refers to the amount of that ration that is mixed at a mill.

Ex. Loaded is the amount of that ration that will be loaded at the Mixer.

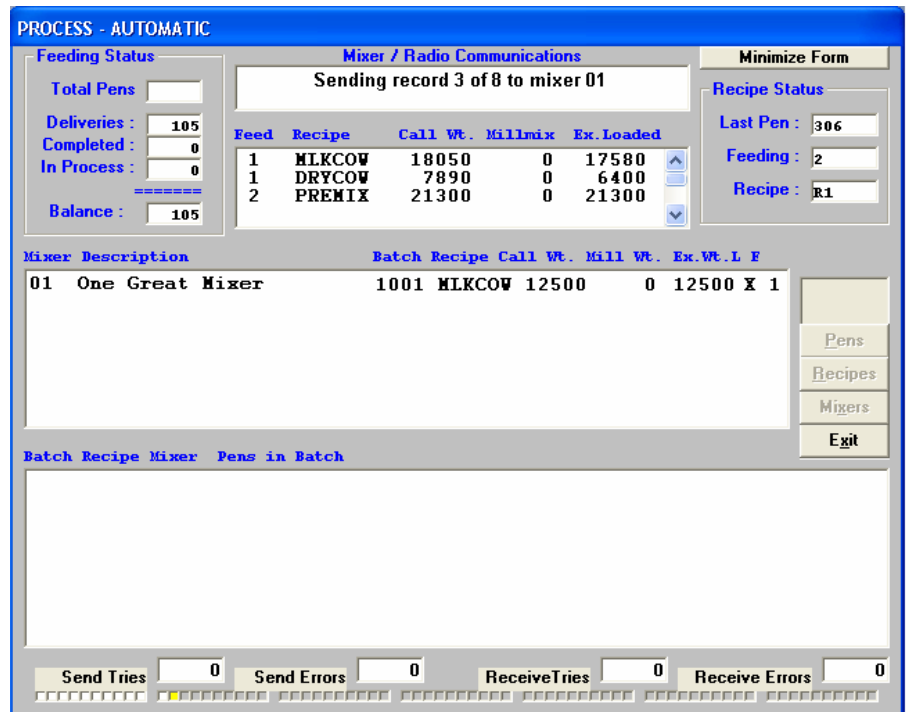
If the RF DataLink program is already running in the Process mode, the program will automatically read any new feeding data sent from third party software. The RF DataLink program looks for feeding updates between each conversation with the EZ Indicator.

Starting the Process

Once the feeding data has been read into the RF DataLink program, you can start the actual feeding process by clicking on the Start button on the Process screen. The feeding process will not begin until you click on the Start button.

How the Process Works

The feeding process in the RF DataLink program begins with a check of all available Mixers. The program initiates radio communication with each Mixer. It determines the status of the Mixer by reading the memory of the EZ Indicator. If the memory contains any loading or feeding data, then the RF DataLink program will not attempt to send a load to that Mixer. If the memory is empty, the RF DataLink will send a load to that Mixer.



The screenshot shows the 'PROCESS - AUTOMATIC' window. It features several panels: 'Feeding Status' with fields for Total Pens (105), Deliveries (105), Completed (0), In Process (0), and Balance (105); 'Mixer / Radio Communications' showing 'Sending record 3 of 8 to mixer 01'; a table of feed recipes; 'Mixer Description' for '01 One Great Mixer'; and 'Recipe Status' with fields for Last Pen (306), Feeding (2), and Recipe (R1). At the bottom, there are counters for Send Tries, Send Errors, Receive Tries, and Receive Errors, all set to 0.

Feed	Recipe	Call Wt.	Millmix	Ex. Loaded
1	MLKCOW	18050	0	17580
1	DRYCOW	7890	0	6400
2	PREMIX	21300	0	21300

Mixer Description	Batch	Recipe	Call Wt.	Mill Wt.	Ex. Wt.	L	F
01 One Great Mixer	1001	MLKCOW	12500	0	12500	X	1

After all the Mixers have been checked, the RF DataLink program will begin making loads. It will begin servicing the pens in the order sent from the third party software.

As the data is being transferred to the EZ Indicator at the Mixer, the upper window in the Process screen will show the status of the communication. The third window will also display the load information for this specific load.

PROCESS - AUTOMATIC

Feeding Status
 Total Pens:
 Deliveries:
 Completed:
 In Process:
 Balance:

Mixer / Radio Communications
 Sending record 3 of 8 to mixer 01

Recipe Status
 Last Pen:
 Feeding:
 Recipe:

Feed	Recipe	Call Wt.	Millmix	Ex. Loaded
1	MLKCOW	18050	0	17580
1	DRYCOW	7890	0	6400
2	PREMIX	21300	0	21300

Mixer Description
 01 One Great Mixer

Batch Recipe Call Wt. Mill Wt. Ex. Wt. L F
 1001 MLKCOW 12500 0 12500 X 1

Batch Recipe Mixer Pens in Batch
 1001 MLKCOW 01 7=10000 8=2500

Send Tries: Send Errors: Receive Tries: Receive Errors:

Pens
 Recipes
 Mixers
 Exit

This information includes the Mixer Number and Description, the Batch Number, Ration, Total Call Weight, Mill Weight and Externally Loaded amount. The L refers to Loaded and the F refers to Feeding Number. Each of these fields are updated when the communication is complete.

Once the communication is complete, the bottom window will display the Pen Numbers and the Call Weights for each pen in this specific load. The L and F fields will be updated in the third window as well. An X signifies that the load is complete.

Feed	Ration	Zone	Call Wt.	Millmix	Ex. Loaded
1	R1	1	18400	1840	16560
1	R1	2	7250	725	6525
1	R1	3	4200	420	3780
1	R2	1	14950	2243	12707
1	R2	4	14950	2243	12707

The RF Datalink will now move to the next Mixer and make/send another load. Once all the Mixers have been loaded, it will then begin to search for each of the loaded Mixers. When it contacts a loaded Mixer that has completed its load, it will download that data from the EZ Indicator and send another load.

This process will repeat until all the pens have been fed and no loading or feeding data remains.

Modifying Ration Data

To access the Ration data, from the Process screen, click on Rations or select Rations from the File menu. This will display the Ration Library screen.

Listed here will be all the loaded rations in the RF DataLink program. Listed are the following:

Ration – this is the ration code as assigned by third party software program.

Lbs/cu.ft. – this is the pounds per cubic foot rating of this ration. This value is set in the third party software program and is used to determine how large a load can be placed into your feed mixer.

Ingredient – this lists the individual ingredients that make up the ration.

Percentage – is the load percentage of each ingredient.

Type – refers to whether the ingredient is mill loaded or Mixer loaded.

Modifying rations in the RF DataLink program should only be done on a short-term fix basis. Rations should always be created within third party software. The ability to change rations is available in the RF DataLink program, as a means of quickly addressing problems not accounted for prior to the ration being built in third party software. These problems can be running out of a particular ingredient, having to skip an ingredient for a feeding, etc.

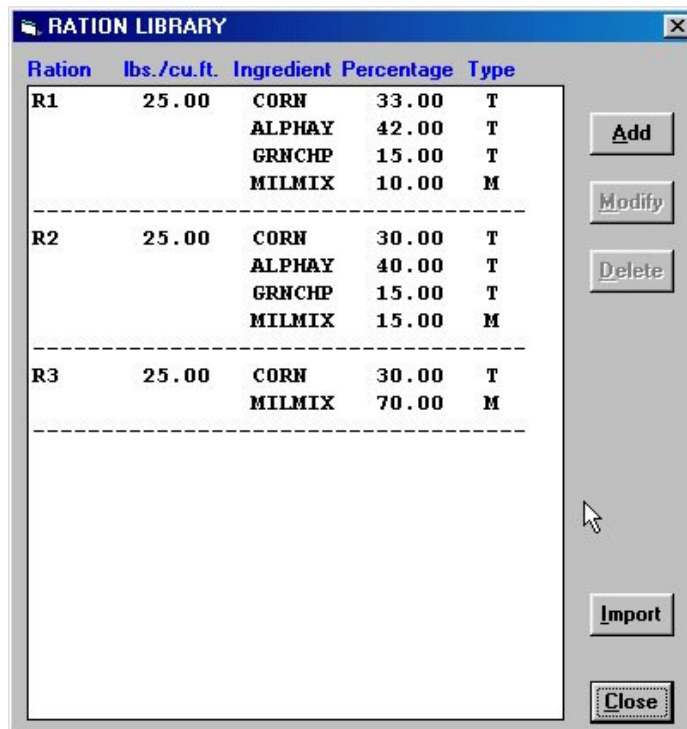
Any changes made to a ration in the RF DataLink program will be overwritten by third party software when the next feeding data is sent. This will occur only if the ration has the same name as the ration you edited.

Note: If you access the ration data from the process screen, the process will be halted until you are done making your changes.

Changing Ingredients

To access the Ration data, from the Process screen, click on Rations or select Rations from the File menu. This will display the Ration Library screen.

To change an Ingredient in a ration, highlight the ingredient you want to change by clicking on it with the mouse. This will make the Modify button selectable. Click on the Modify button. This will display the Ration Data screen.



Ration	lbs./cu.ft.	Ingredient	Percentage	Type
R1	25.00	CORN	33.00	T
		ALPHAY	42.00	T
		GRNCHP	15.00	T
		MILMIX	10.00	M

R2	25.00	CORN	30.00	T
		ALPHAY	40.00	T
		GRNCHP	15.00	T
		MILMIX	15.00	M

R3	25.00	CORN	30.00	T
		MILMIX	70.00	M

Click on the ingredient you want to change.

This will highlight the ingredient and make the Modify Item button selectable.

Click on the Modify Item button.

This will display the Ration Ingredient Data screen.

At this screen you can change the Ingredient Name, load percentage and how the ingredient will be loaded.

To change the ration name or percentage, highlight the current entry and type in the new name or percentage.

To change how the ingredient will be loaded, click on By Mixer to load at the Mixer (by loader), or click on By Mill to load by automated process.

Click on [OK] to save your changes. When the Ration Data main screen is displayed, click [Save Ration] to save your changes.

Note: If you change the percentage of an ingredient and the overall percentage of the ration is less than or greater than 100%, an error message will appear asking you to verify that you want to save the ration. Choose [Yes] to save the ration, [No] to exit without saving.

Ingredient	Percent	Type
CORN	33.00	T
ALPHAY	42.00	T
GRNCHP	15.00	T
MILMIX	10.00	M

Deleting Ingredients

To access the Ration data, from the Process screen, click on Rations or select Rations from the File menu. This will display the Ration Library screen.

To delete an Ingredient in a ration, highlight the ingredient you want to delete by clicking on it with the mouse. This will make the Modify button selectable. Click on [Modify]. This will display the Ration Data screen.

Click on the ingredient you want to delete.

This will highlight the ingredient and make the Delete Item button selectable.

Click on the [Delete] Item button.

The RF DataLink program will ask you to verify that you want to delete the ingredient. Choose [Yes] to delete the ingredient, [No] to exit without deleting.

Click [Save Ration] to save your changes.

If your change results in making the overall percentage of the ration less than or greater than 100%, an error message will appear asking you to verify that you want to save the ration. Choose [Yes] to save the ration, [No] to exit without saving.

Adding Ingredients

To access the Ration data, from the Process screen, click on Rations or select Rations from the File menu. This will display the Ration Library screen.

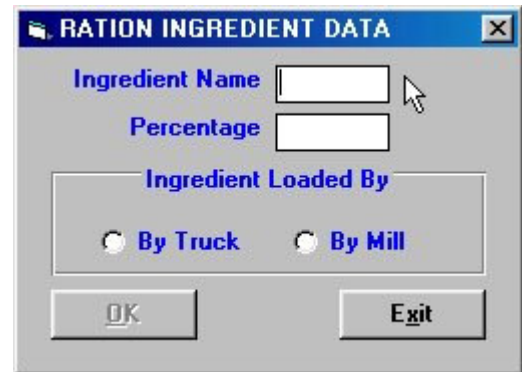
To add an Ingredient to a ration, highlight the Ration you want to add an ingredient to by clicking on it with the mouse. This will make the Modify button selectable. Click on the Modify button. This will display the Ration Data screen.

Click on the Add Item button. This will display the Ration Ingredient Data screen with No data entered.

Enter the Ingredient Name, Load Percentage of the new ingredient and whether the ingredient will be loaded at the Mixer or at the mill.

Click on [OK] to save your changes. When the Ration Data main screen is displayed, click [Save Ration] to save your changes.

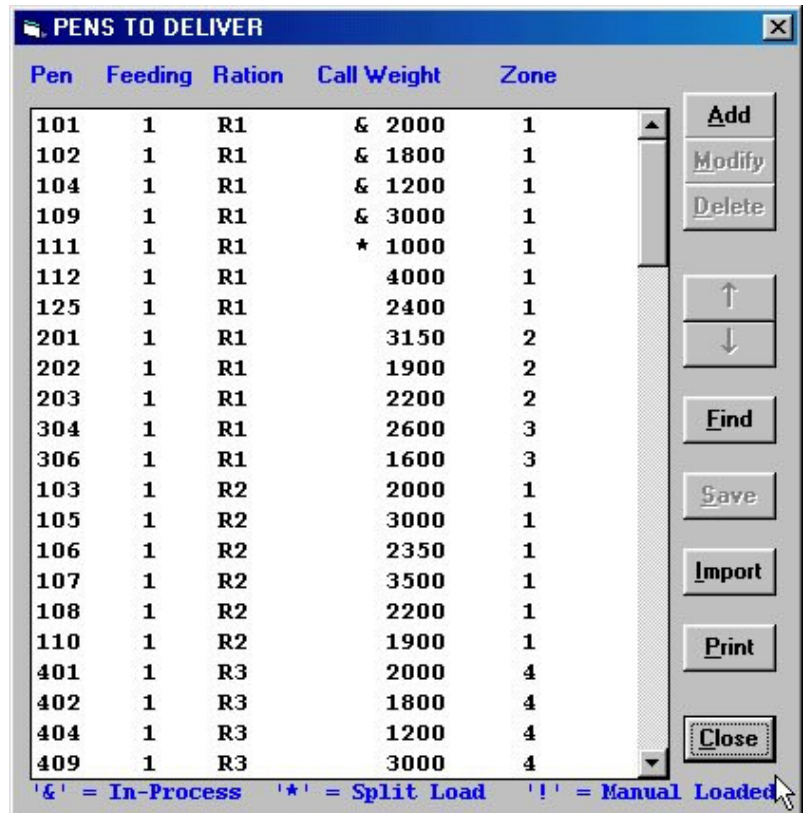
Note: If your change results in making the overall percentage of the ration less than or greater than 100%, an error message will appear asking you to verify that you want to save the ration.



Modifying Pen Data

To access the Pen data, from the Process screen, click on Pen List or select Pen List from the File menu. This will display the Pens to Deliver screen.

Listed here will be all the loaded pens in the RF DataLink program. The pens will be in the order sent from the third party software. Pens can be marked in three ways:



In-Process – the pen will have an “&” in front of the call weight. This signifies that the pen is in the process of being fed. It has been loaded into the EZ Indicator.

Split Load – the pen will have an “*” in front of the call weight. This signifies that the pen has been split into two loads to optimize the Mixer load.

Manual Load – the pen will have an “!” in front of the call weight. This signifies that the pen was manually added at the EZ Indicator.

Pen – this field displays the pen number.

Feeding – displays the feeding number of this pen.

Ration – shows the ration code or ration to be fed to the pen.

Call Weight – is the amount of ration to be fed to the pen.

Zone – displays the zone assigned to the pen.

Notes: Changes to pens should only be done as a quick fix solution to a problem. Pen feeding data should always be created in the third party software.

If you access the pen data from the process screen, the process will be halted until you are done making your changes.

Changing Pen Rations

To access the Pen data, from the Process screen, click on [Pen List] or select Pen List from the File menu. This will display the Pens to Deliver screen.

To change a ration fed to pen, click on the pen you want to change.

This will highlight the pen and make the Modify button selectable.

Click on [Modify].

This will display the Pen Delivery – View/Modify screen.

To change the ration, highlight the current entry and enter the new ration. The new ration must be in the current ration list.

Click [Save] to save your changes.

PEN DELIVERY - VIEW/MODIFY

Pen No. : 106

Feeding No. : 1

Ration No. : R2

Call Weight : 2350 lbs.

Zone Control

01 06

02 07

03 08

04 09

05

Save Close

Deleting Pens

To access the Pen data, from the Process screen, click on [Pen List] or select [Pen List] from the File menu. This will display the Pens to Deliver screen.

To delete a pen, click on the pen you want to delete.

Click [Delete].

The RF DataLink program will ask you to verify that you want to delete the pen. Choose [Yes] to delete the pen, [No] to exit without deleting.

Note: Once a pen has been deleted, it cannot be recovered. It would have to be re-created if deleted by mistake.

Adding Pens

To access the Pen data, from the Process screen, click [Pen List] or select [Pen List] from the File menu. This will display the Pens to Deliver screen.

To add a pen, click on the Add button. This will display the Pen Delivery – Add screen.

Enter the Pen Number, Feeding Number, Ration and Call Weight and Zone for the new pen.

The dialog box contains the following fields and controls:

- Pen No. : [Text Input]
- Feeding No. : [Text Input]
- Ration No. : [Text Input]
- Call Weight : [Text Input] lbs.
- Zone Control: A grid of radio buttons for zones 01 through 09.
- Buttons: Save, Close.

Notes: All added pens are added to the end of the feeding list. If you add a pen for feeding 1 and there are still pens in feeding 1 to be processed, the new pen will be fed last unless moved in the feeding order.

If an added pen is assigned a feeding number 1 and no feeding number 1s are in process, the added pen will have priority and will be fed on the next load processed by the RF DataLink program.

Changing the Pen Order

To access the Pen data, from the Process screen, click [Pen List] or select [Pen List] from the File menu. This will display the Pens to Delivery screen.

Pens are given priority based on the Feeding Number and the Pen Order sent from the third party software. A Feeding 1 always has priority over any other feeding. If no feeding number 1s are in process, then the next priority would be feeding 2. The priority then goes to the pen order.

Pen	Feeding	Ration	Call Weight	Zone
101	1	R1	& 2000	1
102	1	R1	& 1800	1
104	1	R1	& 1200	1
109	1	R1	& 3000	1
111	1	R1	* 1000	1
112	1	R1	4000	1
125	1	R1	2400	1
201	1	R1	3150	2
202	1	R1	1900	2
203	1	R1	2200	2
304	1	R1	2600	3
306	1	R1	1600	3
103	1	R2	2000	1
105	1	R2	3000	1
107	1	R2	3500	1
108	1	R2	2200	1
110	1	R2	1900	1
401	1	R3	2000	4
402	1	R3	1800	4
404	1	R3	1200	4
409	1	R3	3000	4
411	1	R3	4000	4

Legend: '&' = In-Process '*' = Split Load '!' = Manual Loaded

Example: If the pen list contained:

Pen 100 Feeding 1
 Pen 200 Feeding 1
 Pen 300 Feeding 2
 Pen 400 Feeding 2
 Pen 500 Feeding 3

Pens 100 and 200 would be fed first, in that order. If you changed the feeding order to:

Pen 500 Feeding 3
 Pen 100 Feeding 1
 Pen 200 Feeding 1
 Pen 300 Feeding 2
 Pen 400 Feeding 2

Pens 100 and 200 would still be fed first. This is because those pens are assigned a feeding 1 and therefore have priority over Pen 500, which is a feeding 3.

To change the pen feeding order, highlight the pen you want to move by clicking on it with the mouse, this will make the Up and Down arrow buttons selectable.

To move this pen in the feeding order, click the Up arrow to move it up in the order or the Down arrow to move it down in the order.

If you have a pen scheduled for a feeding number 2 that you want to feed immediately, change the Feeding Number to 1 and use the Up arrow button to move the pen to the beginning of the list.

When you have completed making your pen moves, click on Save to save the new feeding order.

Putting an In-Process Pen back in the Feeding

To access the Pen data, from the Process screen, click on Pen List or select Pen List from the File menu. This will display the Pens to Delivery screen.

Pens that are InProcess are marked with an "&" in front of the call weight. To place these pens back into the feeding order, click on the pen you want to change.

This will highlight the pen and make the Modify button selectable.

Click on the Modify button.

This will display the Pen Delivery – View/Modify screen.

Highlight the "&" in front of the call weight and press the backspace key. This will delete the "&".

Click on Save to place the pen back in the feeding list.

PEN DELIVERY - VIEW/MODIFY

Pen No. : 102

Feeding No. : 1

Ration No. : R1

Call Weight : 1800 lbs.

Zone Control

01 06
 02 07
 03 08
 04 09
 05

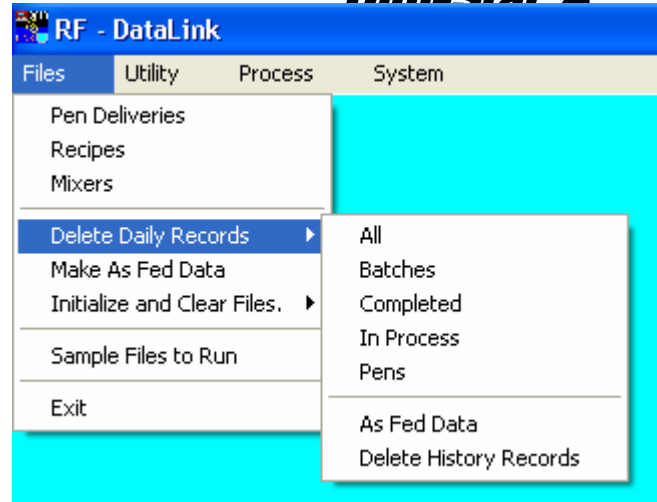
Save Close

Deleting Records

The RF DataLink program retains a copy of all data sent to and from the program. This includes the data sent from third party software and all communications with the EZ Indicator. This data is kept for backup and troubleshooting purposes. These records need to be periodically deleted.

To delete these records, select Delete Daily Records from the File menu.

This will display the file choices available for deletion.



All – will delete the entire currently loaded pen and ration files. This should not be done unless you are going to re-send the entire feeding from third party software.

Batches – will delete the current ration data file.

Completed – this will delete the completed/fed data. Deleting this data will prevent the third party software from recording the feeding.

In Process – will delete only the pens and batches in process.

Pens – will delete the pen list.

As Fed Data – this is a backup file of the completed data sent to the third party software program. It is recommended that this file be kept for 30 days and then deleted.

Delete History Records – will delete all the communication files between the RF DataLink and the EZ Indicator. This should be deleted every 30 days.

To delete any of these records, click on the file with the mouse. The RF DataLink will ask you to verify that you want to delete the record. Click [Yes] to delete the record.

Notes: *Once a file has been deleted, it cannot be recovered.*

Failing to delete the History Records over a period of time will result in slowing down the operation of the RF DataLink program.

Viewing the Error Log

If you are using the Weight Tolerance settings, each load that results in an error will create an error log. This file is called T2w_exc.p. This file is a simple text file and can be opened by any text-editing program.

The file displays data in this order:

T2w_exc.p - Notepad											
File	Edit	Search	Help								
TIM	1001	R1	I	ALPHAY	4620 lbs.	4410 lbs.	-210 lbs.	75 lbs.	09:42	09/17/99	
TIM	1001	R1	1	101	2000 lbs.	2110 lbs.	110 lbs.	100 lbs.	09:43	09/17/99	
TIM	1001	R1	1	111	3000 lbs.	1520 lbs.	-1480 lbs.	100 lbs.	09:44	09/17/99	

- User ID
- Batch Number
- Ration
- Ingredient or Feeding Number
- Ingredient Code or Pen Number
- Call Weight
- Actual Loaded or Delivered Weight
- Resulting Error
- Tolerance
- Time
- Date

Using the above example, ALPHAY had a call weight of 4620 pounds, actual loaded weight of 4410 pounds resulting in an error of 210 pounds.

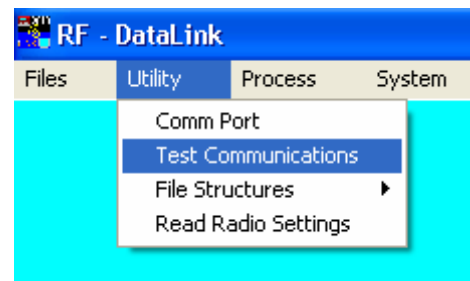
The error log should be deleted periodically.

Test Communications

To access this screen select Utility, and then Test Communications.

The option will allow you to test communications with the EZ indicator.

In this screen you can select the EZ indicator to communicate with and view that status of the indicator.



Indicator Status

The status of the indicator is what information is in the scales internal memory.

Example: If you send one load of 6 ingredients and 2 pens the status will show: **U0008D0000** This shows that there are 8 records in the scale memory of undone information. As the operator completes each ingredient and pen the undone records will then move to the done side. In order for the scale to send back complete data to RF Datalink there cannot be any undone records in the memory. The status must show: Example: **U0000D0008** at this time the scale will then start to send back the completed data.

If a load was sent to the EZ indicator that needs to be removed you have the ability to clear the batches in that indicator by clicking on the "Clear Mixer" button. If the status is: D9999U9999 this means that the scale is not in range or the scale is scrolling a message. The scale must be in weighing mode: Net or Gross for the scale to be cleared. Select the Get Feeding Status to refresh the status screen. Then select Clear Mixer.

You will have the same control in this screen as you would have at the indicator. You can click on the keys and also send a text message to the indicator. The indicator will continue to display the message until a key is press.

Operators Manual

Reliability Meter



This meter will show how well the scale and the base radio is communicating. The Good Data and Missed Data show how many times the base radio has received an "OK" message from the scale. Excellent reliability would be over 95%. If you are dropping below into Good refer to the front section about maximizing radio range.

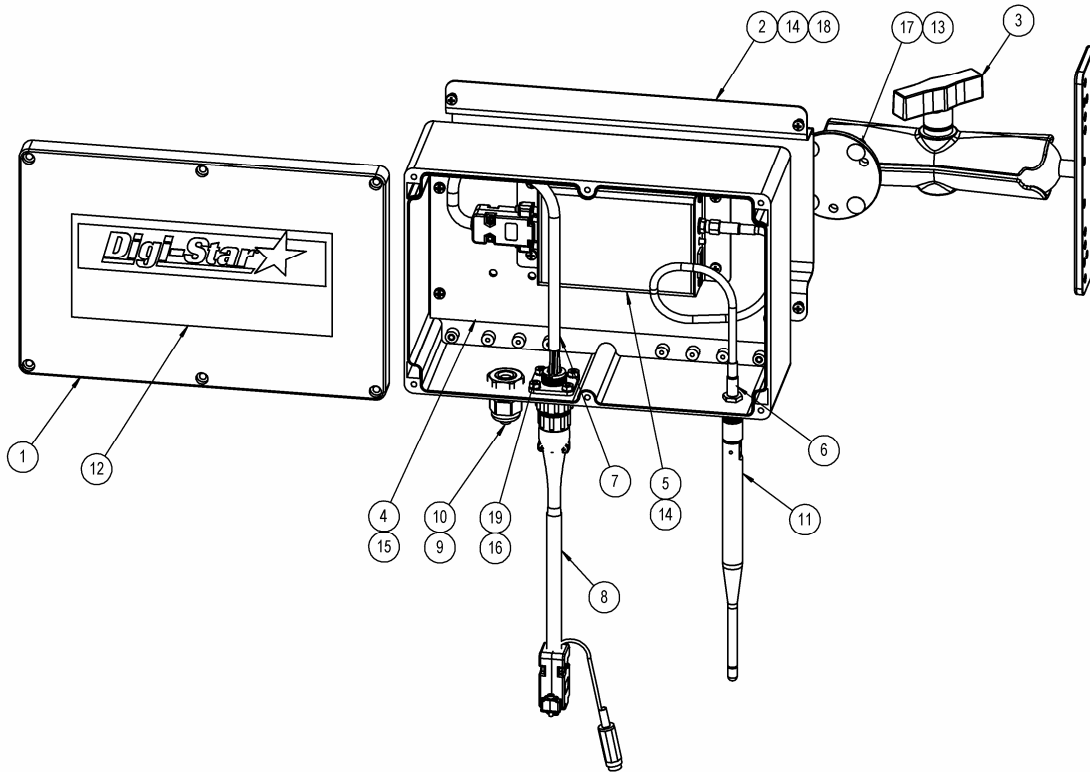
The screenshot shows the 'Monitor Mixers' software window. At the top left, there is a table with two columns: 'Mixer' and 'Channel'. The table contains the following data:

Mixer	Channel
01 Mixer 1	01
03 Mixer 3	03
04 Mixer 4	04
05 Mixer 5	05
06 Mixer 6	06

Below the table, it says 'Reading Mixer 03'. The main part of the interface is a virtual representation of the Digi-Star EZ 3500V scale. The scale's display shows '0'. The scale has various buttons like 'ID', 'Zero', 'Print', 'Help', 'ON', 'Off', 'Timer Counter', 'Function', 'Select', 'Tare', 'Load', 'Hold', 'Net Gross', 'Ingr Pen', 'Recipe', 'Bunk Read', and a numeric keypad. The scale is labeled 'EZ 3500V' and 'Digi-Star'. To the right of the scale, there are two vertical bar graphs. The first is labeled 'Signal Strength' and has a scale from 0 to 100. The second is labeled 'Reliability' and has a scale from 0 to 100. The 'Reliability' graph shows a green bar at 98.77%. Below the 'Reliability' graph, there are two more bars: 'Good Data' with a value of 80 and 'MissedData' with a value of 1. A green circle highlights the 'Good Data' and 'MissedData' bars. At the bottom of the interface, there are buttons for 'Get Feeding Status', 'Status' (showing 'U0000D0000'), 'Clear Mixer', 'Enter Message to Send to mixer', 'Send Message', and 'Close'.

Repair Parts – Std. Antenna

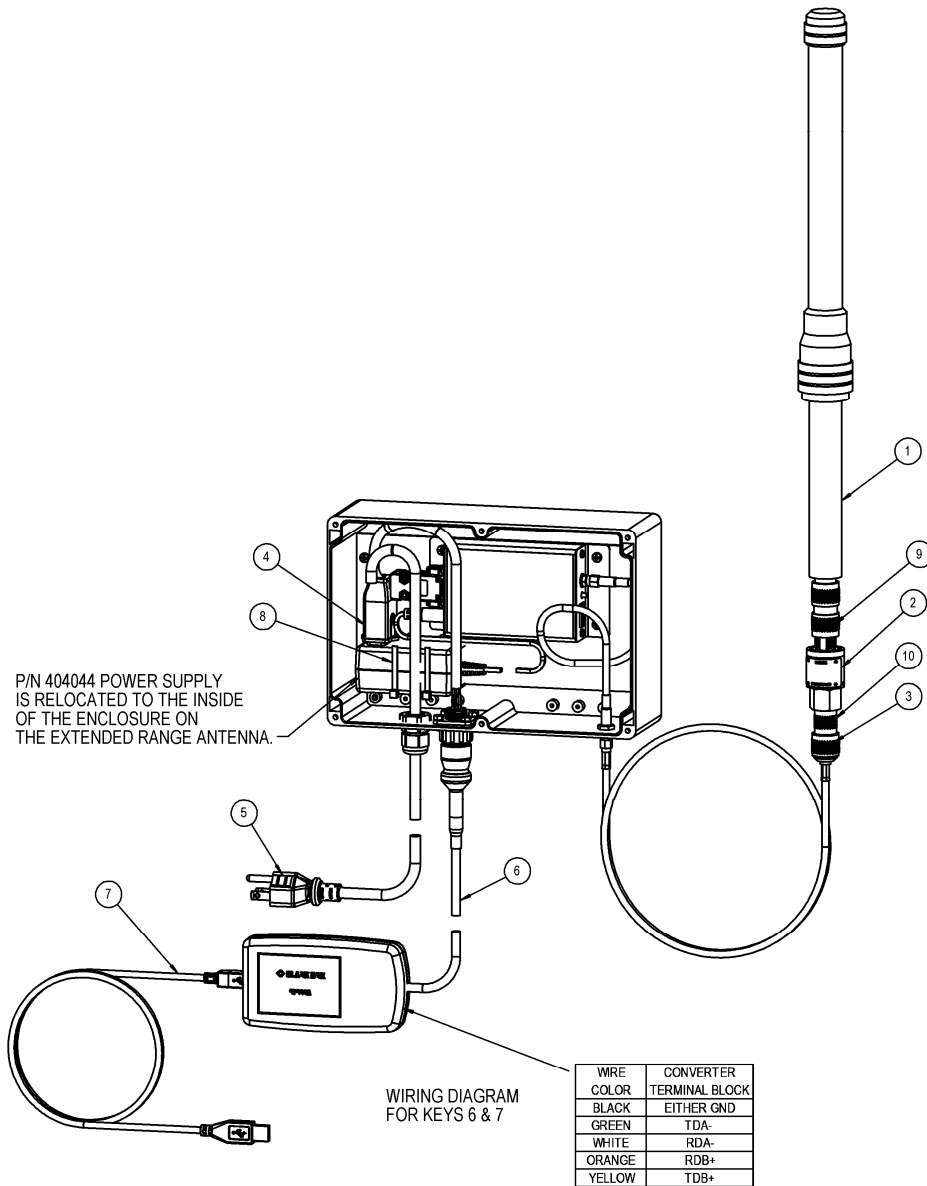
(P/N 403965 KIT-DATA LINK STANDARD BASE)



KEY	QTY.	PART NO	DESCRIPTION
1	1	404007	HOUSING-DATALINK BASE RADIO
2	1	403987	BRKT-DATALINK BASE RAM MOUNT
3	1	403314	MOUNT-RAM-111 1.5" BALL 7.3"LG
4	1	403986	PLATE-RADIO MOUNTING
5	1	403967	RADIO ASSY-2.4GHZ BASE,RS232
6	1	403988	CABLE-COAX 12" RPSMA M TO F
7	1	403989	CABLE-DATALINK RS232/RS422
8	1	403990	CABLE, DATALINK RS 232 W/POWER
9	1	141885	RELIEF - STRAIN HEYCO
10	1	146724	ROD-PLASTIC 1/4"
11	1	403972	ANTENNA-DATALINK BASE
12	1	403991	DECAL-DATALINK BASE
13	4	403495	SCR- #10-24 X .5 CRG ZP GR2
14	8	145339	SCR-#6-32 x 1/4 PHMS
15	4	403774	SCR-#6x5/16 PHSTS 48-2 ZP
16	4	141967	SCR-#4-40 x 3/8 PHMS PHL
17	4	403501	NUT-#10-24 KEPS ZP
18	4	834109	NUT-#6-32 KEPS
19	4	141966	NUT-#4-40 KEP SS
20	(not shown)	404044	POWER SUPPLY-UNIVERSAL 12V, .42AMP
21	(not shown)	403975	CONVERTER-USB TO RS232
22	(not shown)	404045	PLUGS-AC R-SERIES KIT

Repair Parts – Extend Range Antenna

(P/N 403966 KIT-EXTENDED RANGE ANTENNA)



KEY	QTY	PART NO	DESCRIPTION
1	1	404010	ANTENNA-2.4GHZ, 6 DB
2	1	404012	SURGE PROTECTOR
3	1	404013	CABLE-COAX N-MALE TO RPSMA 36"
4	1	404014	POWER PLUG-2 TERMINAL, SCREW
5	1	404015	POWER CORD-18 AWG, 3 COND 6 FT
6	1	404016	CABLE-DATALINK RS422 150 FT
7	1	404017	CONVERTER-USB TO RS422
8	2	PS2144-	CABLE TIE-.14x11.625" BLACK
9	1	404011	ADAPTOR-COAX N-MALE TO N-MALE
10	1	404018	ADAPTER-COAX N-FEMALE-N-FEMALE