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# Mirus 3.1.0

## Harvest Data Collection Software from HarvestMaster

### Release Notes

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#### Supported Personal Computers Running Windows OS:

- Laptops, Tablet PC

#### Supported Operating Systems

Component	Minimum* Requirements
Computer and processor	2.0 Ghz dual core, 1.5Ghz quad core, or more capable processor
Memory	4 GB or more recommended
Hard disk	320MB available disk space
Display	800x600 or higher resolution display
Operating system	Windows 7, Windows 8, 32-bit or 64-bit OS
Video Playback	Windows Media Player version 11 or higher

#### To Begin:

#### < INSTRUCTIONS FOR INSTALLATION >

1. Prior to installation of Mirus it is recommended that the latest Windows Updates be installed.
2. Close all other running applications before executing the Mirus Install.
3. Copy Mirus\_3.1.0-Full to the tablet or laptop PC.
4. Execute and follow prompts for installation to the tablet or laptop PC.
5. Open Mirus from the desktop and enable the correct GrainGage.

#### MINIMUM CALIBRATION WEIGHTS

- H2 Plot Bucket: 5.0 lb.
- H2 Test Weight: 2.0 lb.
- HCGG Plot Bucket: 5.0 lb.
- BDS cup: 2.0 lb.
- Classic GG: 2.0 lb.

## New Features and Updates

- [MIR-1746](#) H2 Devices need to pull calibration coefficients for Chassis and DSP  
*Description* Saves the calibration coefficients to the Mirus database in the event that a DSP module goes bad.
- [MIR-1668](#) Export dependency data / traits  
*Description* Export additional data found in database to export file such as NIR data, raw GG data. Allows user to select which data to export.
- [MIR-1667](#) Yield map for forage system  
*Description* Removes moisture and TW in yield calculation for GHM devices. Allows user to set an estimated moisture value. Units should be tons/acre or metric tons/ hectare. Default moisture will be configured in the spatial settings for yield attribute, but user can change this value when connected to a GHM device.
- [MIR-1666](#) Update and Show real-time data on Single/GHM  
*Description* Single High Cap users are used to seeing data updated as a function of full weigh time as bucket is being filled. Mirus will only issue a request for real-time data if the quad screen is selected.
- [MIR-1663](#) Auto-reconnect attachments  
*Description* Allows Mirus to remember what attachment was connected last and reconnect at Mirus startup.
- [MIR-1646](#) Serial cable disconnection  
*Description* Add functionality to SerialCanPort to detect when a Serial Cable (as opposed to a USB cable) has been connected, and also detect when the serial cable has disconnected.
- [MIR-1645](#) Actuator support for DSP Module  
*Description* Updates the DSP module to include actuator support for the Single H2 GrainGage.
- [MIR-1606](#) Update H2 Icons to new style graphics  
*Description*
- [MIR-1605](#) Monitor weight to initiate strip mode cycle - for H2 only  
*Description* Need to monitor weight reading to initiate the strip mode cycle on a single H2 bucket. This only applies to H2 due to limitations of the Analog module. (Min weight 10 lb., default weight 25 lb., max weight 50 lb.) Level detects removed from diagnostics; level tripping is not enabled.
- [MIR-1604](#) Backup log format file change - only store map name, moisture curve, and settings when printing header  
*Description* Additional source for backup data (three locations) for printer replacement. Update to store GrainGage timers. Added a new way for plugins to log backup log data at Collection startup. Improvements to backup log of standard plot id maps.
- [MIR-1603](#) Include new Node ID Changer application  
*Description* Updates the Node ID changer application in the Mirus installer.
- [MIR-1601](#) H2 Min Max Timers limits  
*Description* Set minimum and maximum values for H2 actuators so users cannot set values too high or low causing data problems.
- [MIR-1527](#) Changed the Plot gate name to Bottom Gate to reflect the operation the H2  
*Description* Improves the description of the gate to make it more intuitive.
- [MIR-1480](#) Increase font size on List View  
*Description* Improves the readability of the information on the screen.
- [MIR-1479](#) Integrate new splash screen  
*Description*
- [MIR-1474](#) No Console GrainGages  
*Description* Added support for all GrainGages to function without a console. Detect if a console exists when device connects. Removed all dependencies that currently exist in GrainGages for the console so that they become optional (printer, remote enter, etc.). Added a script variable so that scripts are able to detect if a particular GrainGage is running with a console module.
- [MIR-1438](#) Improve backup log of standard plot id maps

<i>Description</i>	See MIR-1604
<a href="#">MIR-1432</a>	Strip Level Detect Validation
<i>Description</i>	Determine if the level detect configuration is valid when entering harvest and raise a tare warning if the level detects are out of tare.
<a href="#">MIR-1424</a>	Export heat maps for all trait data ratings
<i>Description</i>	Allows the exportation of all trait or rating data.
<a href="#">MIR-1398</a>	H2 Smart Weigh
<i>Description</i>	Add support for a weigh command that sends a reply indicating when it is ok to start opening gates to drain. After draining, verify that the data was received.
<a href="#">MIR-1096</a>	Switch to SQLite Map Database.
<i>Description</i>	Create new maps with SQLite support. Load SDF maps as usual. Register the map with Mirus so that you can double-click it to have it import and load in Mirus.
<a href="#">MIR-908</a>	Actuator support upgrades
<i>Description</i>	Add transition timing to actuator information. Fix the limit switch state so that they are always correct and make the actuator honor that state regardless of whether an actuation was pending.
<a href="#">MIR-1608</a>	Backup file minor improvements
<i>Description</i>	See MIR-1604
<a href="#">MIR-906</a>	H2 Scripts and Calibrations
<i>Description</i>	Created scripts for the single, twin and triple hopper configurations. Created calibrations for the DSP test weight cup, as well as videos for the triple hopper configuration.
<a href="#">MIR-905</a>	Update DSP Settings
<i>Description</i>	Update to use new firmware combined settings and tilt settings.
<a href="#">MIR-904</a>	Streaming Diagnostics
<i>Description</i>	Enabled Streaming diagnostics during traditional diagnostics and during harvest between plots. This also includes traditional HM800 systems with a new command that does a quarter weight to allow quicker feedback while the bucket is filling.
	When enabling diagnostics on the H2, the cup must be in the weigh state.
<a href="#">MIR-158</a>	Harvest icon updated
<i>Description</i>	
<a href="#">MIR-153</a>	Can I/O automatic shutdown on error
<i>Description</i>	If Mirus locks up or shuts down unexpectedly, the CAN I/O can be left in a Not Resolved state. Restarting Mirus does not prompt the user to shut down the CAN I/O service.
	Various UI settings and Plugin Support Improvements

## Known Issues

<a href="#">MIR-1657</a>	Test Weight Calibration fails with a 0.7 lb. weight
<i>Workaround</i>	Minimum weights determined, and added to release notes (see above).
<a href="#">MIR-11</a>	System gives false moisture re-tare messages
	System gives false moisture tare messages when 1 <sup>st</sup> data point in moisture is below 0.3mv. (Check selected curve that lowest moisture in the curve is not below 0.3mv)
<i>Workaround</i>	To prevent this from occurring, add a low point in the curve to set 1% to .3 volts.
<a href="#">MIR-2017</a>	Unable to re-navigate using after plot traits
<i>Workaround</i>	Open up Combine Observation via the pencil icon. Enter the observation and exit combine observation screen. This will unlock the cycle button to allow cycling again.
<a href="#">MIR-2020</a>	Copy of 4row map causes Mirus to crash
	Get an error "an unknown error has occurred. Mirus will now close." when copying a 4 row map. If you go back into Mirus, the copy map gets generated, but it is just a regular range/row map.
<i>Workaround</i>	Restart Mirus, and try again. If error continues, create a new map manually.

## Bug Fixes

- [MIR-1996](#) H2 Single Strip Mode with after plot trait
- [MIR-1680](#) Top Gate Timeout Errors Set the default to limit switch OFF.
- [MIR-1989](#) Default timer settings wrong on Top Gate in Single H2
- [MIR-1967](#) Exporting repetitive traits fails in that only the first dated repetitive values are exported.
- [MIR-1928](#) Moisture Curve Conflict Error Message
- [MIR-1908](#) Real Time Weight in Single BDS Hi-Cap Strip mode causes weight errors
- [MIR-1903](#) Numerical keypad not displaying after first note entry when running Twin HiCap if you exit harvest between plots
- [MIR-1897](#) BDS should be changed to Test Weight cup on H2
- [MIR-1821](#) State machine doesn't continue after limit switch timeout on Classic GrainGage
- [MIR-1813](#) Missing Range and Row data when exporting
- [MIR-1749](#) Zero for Range or Row when creating map causes crash
- [MIR-1747](#) Test Weight metric units are incorrect in the Calibration Wizard
- [MIR-1741](#) Mirus stops reading Moisture Data when Probe temperature = 28.3
- [MIR-1737](#) Under Weight cycles are being added to the average Test Weight & Moisture
- [MIR-1717](#) "Device Error Occurred" / "Error Enabling Harvest" errors received when the H2 is left on overnight.
- [MIR-1716](#) Spatial screen heat map crashes when a decimal value is entered in integer/rating trait.
- [MIR-1715](#) Cannot import Complex map when in Spanish
- [MIR-1714](#) DSP disconnected entering harvest
- [MIR-1711](#) Set DSP Actuator timings to Max causes failure
- [MIR-1705](#) DSP stops communicating after Moisture curve is edited
- [MIR-1703](#) Device Utilities - selection shows up when connected to a GrainGage
- [MIR-1702](#) Weight was Out Of Tare - Moisture Out of Tare reported instead
- [MIR-1692](#) Light Settings are Wrong. Should be an actuator.
- [MIR-1691](#) Harvest Setup Names not in Spanish
- [MIR-1689](#) Moisture Sensor reports a Tare warning of about 800%
- [MIR-1688](#) English caption in Spanish Calibration video
- [MIR-1683](#) Quick Notes - relocate to a plot and take a quick note and it doesn't show blue
- [MIR-1681](#) Enter data for Quick Notes- note gets placed in other plots
- [MIR-1679](#) Attribute Labels not in Spanish
- [MIR-1677](#) In Note Taking – if plots have notes, Mirus does not warn that data will be overwritten
- [MIR-1676](#) Create Text Trait with over 20 characters, default value causes crash
- [MIR-1675](#) Changing Countdown Timer accurately is difficult
- [MIR-1674](#) Maps created with special Characters do not produce a backup log
- [MIR-1673](#) GrainGage power glitch can cause permanent communication loss with the Moisture Sensor.
- [MIR-1652](#) Actuator Configurator shows "An unknown error occurred." when switching from 2 to 1.
- [MIR-1650](#) DSP firmware (DSP Analog) name is confusing
- [MIR-1649](#) Single H2 Strip Mode will flush early, and move to next plot.
- [MIR-1647](#) Remove Evac Gate Open State Timer for H2
- [MIR-1639](#) Test weight volume units display in metric when they should be in English
- [MIR-1637](#) Moisture values not displayed in Spatial screen when System Controller connected
- [MIR-1634](#) Moisture shows high when the moisture voltage is low.
- [MIR-1633](#) A cycling of the top gate is needed to avoid Limit Switch errors
- [MIR-1630](#) Default Test Weight Volume and Minimum Weight for Twin H2 are incorrect
- [MIR-1628](#) Tare times out when weigh time high
- [MIR-1627](#) H2 Test Weight Cup Volume incorrect
- [MIR-1626](#) Factory reset under settings, does not reset all settings back to default settings
- [MIR-1624](#) Mirus doesn't save Trip Weight Threshold setting

[MIR-1623](#) Deleting a map does not delete the folder and causes errors in error log.

[MIR-1622](#) Descriptions are missing in the H2 Plugin

[MIR-1621](#) Weight in bucket when starting harvest does not cause a Tare Warning (MIR-1620)

[MIR-1619](#) H2 Calibration Wizard video is out of date

[MIR-1618](#) CAN errors on startup of twin H2

[MIR-1617](#) H2 Strip Plot mode ignores weight level threshold

[MIR-1616](#) Exiting Diagnostics does not turn off the pollers when USB cable is unplugged

[MIR-1615](#) Calibration test weight volume fails to load on Twin H2

[MIR-1614](#) Aux 7 port times out when OST is set to 1500ms on the Twin H2

[MIR-1613](#) Tare times out on Twin H2

[MIR-1612](#) Test weight data stops streaming in diagnostics

[MIR-1611](#) No Test weight in harvest on H2

[MIR-1609](#) Reconnect device issue when enabling a device for the first time

[MIR-1607](#) Cycle button gets stuck in flush cycle in Twin H2 if a level trip is sent during the cycle

[MIR-1597](#) H2 Single Plot mode - never recovers from USB disconnect

[MIR-1596](#) H2 Single Strip mode - shows a yellow/red cycle button and does not collect data

[MIR-1595](#) H2 Single Plot mode - shows a yellow cycle button and you can't exit Harvest

[MIR-1594](#) H2 Calibration needs new videos and has references to BDS cup

[MIR-1592](#) In H2 Diagnostics - the light goes ON when you select Off

[MIR-1574](#) Staged plots, changing map can cause crash.

[MIR-1573](#) Cannot Export Data File When There is a Period in MAP Name

[MIR-1563](#) Export of sub-map - File name is the parent of the sub-map

[MIR-1562](#) Disabling a GrainGage using Mirus Plugin Manager doesn't disable that GrainGage.

[MIR-1561](#) Export of heat map with Rating after plot, length of 3, set to 999 - causes Error-Object reference not set to an instance of an object.

[MIR-1559](#) Observation Notes not getting saved in the correct row when in Four Row, Plot Mode and collecting 1 trait after plot, using circular navigation

[MIR-1554](#) Spatial Screen does not repaint after completion.

[MIR-1553](#) When changing the "Identifier Filter", it does not re-paint the spatial window.

[MIR-1552](#) Error "Traceback (most recent call last): KeyboardInterrupt" when navigation completes

[MIR-1549](#) Default Classic GrainGage flush scripts are incorrect

[MIR-1545](#) Creating a new map from Import allows more than the 50 character maximum, and will hide that map.

[MIR-1531](#) Mirus does not detect when module is in boot-loader mode

[MIR-1528](#) When generating a rep increment of 2 it does not start on the correct starting plot

[MIR-1525](#) Random System console Error reported during new connection

[MIR-1524](#) GHM harvest setup slope and motion error

[MIR-1486](#) Changing units while in setup can cause some setup views to not change units

[MIR-1461](#) Mirus crashed when exiting back to main menu

[MIR-1452](#) Actuator Node ID changer app broken

[MIR-1437](#) Breaking connection and reconnecting gives unsaved setting message on BDS GrainGages

[MIR-1428](#) When you are in Harvest with a twin BDS and try to over write the data Mirus locks up.

[MIR-1388](#) Map copy preserves sequence number

[MIR-907](#) HM800 Diagnostics is not disabled in time to clear invalid data prior to harvest

[MIR-896](#) Identifier 1,2,3 order not remembered after resuming harvest on an imported map

[MIR-499](#) Slider position in list view (Quad Screen) does not get remembered

[MIR-162](#) Exiting BDS volume calibration without completing does not reset sample volume setting

[MIR-146](#) Home button does not work at random time from inside setup menus

[MIR-145](#) No asterisk to indicate a setting needs to be saved

[MIR-139](#) There is the possibility of inadvertently overwrite moisture curve data points

[MIR-135](#) Load cell calibration settings not saved

- [MIR-108](#) Selecting “Resume” causes an error
- [MIR-95](#) When defining a new custom trait if default text is entered before type is changed to text the warning is not cleared
- [MIR-82](#) Copied trait does not show in traits setup list after saving trait
- [MIR-79](#) On the HiCap GrainGage Mirus does not display a warning when there is a Limit Switch error when entering harvest
- [MIR-75](#) Different time formats are used for export and backup files
- [MIR-74](#) Messages entering and exiting note taking say harvest
- [MIR-67](#) Cycle starts automatically when level detect is not plugged into the port
- [MIR-66](#) With pre and post traits the cycle button can become locked
- [MIR-64](#) Exporting a file with repetitive trait taken on different days only records the original date
- [MIR-63](#) Displayed resolution of the Moisture voltage is too great
- [MIR-45](#) “Save changes” message duplicated when changing units
- [MIR-32](#) Out of Range warning calculation is incorrect
- [MIR-22](#) Lockup when using software after losing connection to device
- [MIR-18](#) Manually cycling buckets on the Classic GrainGage while in Harvest after saving data causes zero weight & moistures in first sub-sample of next plot.

Actuator	Single H2	Twin H2	Triple H2	Single HighCap	Twin HighCap	Single BDS	Twin BDS	Classic	Generic	Generic w/Sub	
Top OTT (ms)	300	300	300	-	-	-	-	-	-	-	
Top OST(ms)	400	400	400	-	-	-	-	-	-	-	
Top CTT (ms)	400	400	400	-	-	-	-	-	-	-	
Top LS open	No	No	No	-	-	-	-	-	-	-	
Top LS Close	No	No	No	-	-	-	-	-	-	-	
Bottom OTT (ms)	300	300	300	-	-	-	-	-	-	-	
Bottom OST(ms)	1100	1100	1100	-	-	-	-	-	-	-	
Bottom CTT (ms)	800	800	800	-	-	-	-	-	-	-	
Bottom LS open	No	No	No	-	-	-	-	-	-	-	
Bottom LS Close	Yes	Yes	Yes	-	-	-	-	-	-	-	
Sep. OTT (ms)	300	300	300	-	-	-	-	-	-	-	
Sep. OST(ms)	600	600	600	-	-	-	-	-	-	-	
Sep. CTT (ms)	800	800	800	-	-	-	-	-	-	-	
Sep. LS open	No	No	No	-	-	-	-	-	-	-	
Sep. LS Close	Yes	Yes	Yes	-	-	-	-	-	-	-	
Evac OTT (ms)	400	400	400	-	-	-	-	-	-	-	
Evac OST(ms)	1100	1100	1100	-	-	-	-	-	-	-	
Evac CTT (ms)	800	800	800	-	-	-	-	-	-	-	
Evac LS open	No	No	No	-	-	-	-	-	-	-	
Evac LS Close	Yes	Yes	Yes	-	-	-	-	-	-	-	
Plot OTT (ms)	-	-	-	600	400	400	400	600	800	800	
Plot OST (ms)	-	-	-	400	600	400	400	400	800	800	
Plot CTT (ms)	-	-	-	400	400	400	600	600	800	800	
Plot LS Open	-	-	-	No	No	No	No	Yes	No	No	
Plot LS Close	-	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Left/Test OTT (ms)	-	400	400	-	600	-	600	600	800	800	
Left/Test OST(ms)	-	300	300	-	400	-	400	400	400	400	
Left/Test CTT (ms)	-	400	400	-	400	-	400	600	800	800	
Left/Test LS open	-	No	No	-	No	-	No	Yes	No	No	
Left/Test LS Close	-	Yes	Yes	-	Yes	-	Yes	Yes	Yes	Yes	
Right/Hopper OTT (ms)	-	400	400	-	600	-	600	600	800	800	
Right/Hopper OST(ms)	-	300	300	-	400	-	400	400	400	400	
Right/Hopper CTT (ms)	-	400	400	-	400	-	400	600	800	800	
Right/Hopper LS open	-	No	No	-	No	-	No	Yes	No	No	
Right/Hopper LS Close	-	Yes	Yes	-	Yes	-	Yes	No	Yes	Yes	
Right2 OTT (ms)	-	-	400	-	-	-	-	-	-	-	
Right2 OST(ms)	-	-	300	-	-	-	-	-	-	-	
Right2 CTT (ms)	-	-	400	-	-	-	-	-	-	-	
Right2 LS open	-	-	No	-	-	-	-	-	-	-	
Right2 LS Close	-	-	Yes	-	-	-	-	-	-	-	
Wiper Delay (ms)	-	-	-	-	-	0	0	-	-	-	
Wiper Return Delay(ms)	-	-	-	-	-	250	250	-	-	-	
Dump Return(ms)	-	-	-	-	-	800	800	-	-	-	
<b>Weight</b>											
Weigh Time (ms)	1000	1000	1000	800	800	800	800	800	800	800	
Trip Weight Threshold (kg)	11.34	-	-	-	-	-	-	-	-	-	
Plot Bucket Tare WT (kg)	0	0	0	-	-	-	-	-	-	-	
Plot Wt Tare Warn (kg)	0.227	0.227	0.227	0.227	0.227	0.227	2.268	0.227	0.227	0.227	
LoadCells	2	2	2	2	2	2	2	3	2	2	
Auto-Tare Weight	-	-	-	-	-	-	-	-	No	No	
S&M Comp Enabled	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
Q tare Plot Wt	0	0	0	-	-	-	-	-	-	-	
LC1 Coeff	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.50	2.00	2.00	
LC2 Coeff	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.50	2.00	2.00	
LC3 Coeff	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
<b>Moisture</b>											
Moist Tare Warn (%)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Moisture Tare											
Moisture Cal. Temp (C°)	20	20	20	20	20	20	20	20	20	20	
Temp. Coeff.	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	
EM Tare Volt (mV)											
EM Tare Freq (MHz)											
EM V Coeff	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	
EM F	1	1	1	1	1	1	1	1	1	1	
EM Z	67	67	67	67	67	67	67	67	67	67	
<b>Test Weight</b>											
TW Weight Time (ms)	-	-	-	-	-	1100	1100	-	-	-	
TW Chamber Volume (cc)	2458.06	2458.06	2458.06	-	-	1452.00	1452.00	0.00	-	-	
TW Settle Time(ms)	-	-	-	-	-	600	600	-	-	-	
TW Accel 1g (mV)											
TW LC Coeff. Conversion Multiplier	2000	2000	2000	-	-	1500	1500	-	-	-	
TW LC Tare (mV)											
Q Tare TW											
TW S&M Comp Enabled	Yes	Yes	Yes	-	-	No	No	-	-	-	
TW Tare Warn (kg/hl)	0.50	0.50	0.50	-	-	1.29	1.29	-	-	-	
<b>Level Detect</b>											
left Level Detect Tare	0	0	0						-	-	
Right Level Detect Tare	0	0	0	-	-	-	-	-	-	-	
Left/Open Level Threshold	10	10	10	10	10	10	10	10	-	-	
Right/Close Level Threshold	10	10	10	-	10	-	10	10	-	-	
Level Clear Delay (ms)	1000	1000	1000	1000	1000	1000	1000	1000	5000	5000	
Hopper Delay (ms)	-	-	-	-	-	-	-	3000	-	-	
Trip Source	-	Left or Right	Left or Right	Right (single)	Left or Right	Right (single)	Left or Right	Left	Right (single)	Right (single)	