



TeeJet TECHNOLOGIES MATRIX 908 GPS Guidance System Instruction Manual

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TeeJet TECHNOLOGIES MATRIX 908 GPS Guidance System



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Matrix® 908 v1.31

April 2023

Associated Documentation:

- Quick Start Guide 98-01586 R2
- User Guide 98-01578 R3
- Product Registration Bulletin 98-01585 R0
- North America Warranty & Registration Bulletin 98-01587 R0
- Software Update Instructions 98-01577 R4

WARNING! If your system uses an ISOBUS device, contact your local dealer or TeeJet Customer Service BEFORE updating your console from v1.00/v1.02 to v1.10 or later version. After updating to v1.10 or later, an unlock code will be required to access the Universal Terminal (UT) functionality

WARNING! Software updates frequently include changes needed to support running changes to internal components in the device. New software is typically backwards compatible to older hardware, but older software often does not work on newer hardware. DO NOT USE A PREVIOUSLY RELEASED SOFTWARE UPDATE TO ROLL CONSOLE SOFTWARE BACK TO AN EARLIER VERSION. Contact TeeJet Customer Service or your local dealer for assistance.

NOTES: If a feature is not explicitly stated in this or previous release note documents it is not currently supported by Matrix 908.

New Features:

- Introduces a new 'Minimum Boundary Settings' mode where mapping of small field objects like those found on golf-courses is more accurate. This mode is enabled by a USB drive app and is not suitable for regular agricultural applications.
- The Job Summary Details page now shows 4 decimal places for Total Arable Land, Exterior Boundary Area, Interior Boundary Area, & Total Applied Area.
- The Area Bounded popup dialog now displays 4 decimal places for both Interior and Exterior boundaries.

Fixes:

- Corrects problem where it was necessary to establish vehicle heading at the start of every job. If there are no changes in the Vehicle or Device during a session, Vehicle heading only needs to be established before opening the first job in each session.
- Corrects problem where the 'In-Line Distance to Antenna' and 'Lateral Distance to Antenna' values entered in the very first vehicle created on a new console were not saved until the vehicle configuration was edited and saved again.
- Corrects problem where the system would errantly display the pop-up "Bad GNSS signal quality. Cannot start mapping. GNSS signal quality is bad." when trying to start mapping a boundary immediately after opening a job and stationary.
- Corrects problem where copied jobs could not be manually named by the user.
- Corrects problem where sometimes when a boundary was closed there would be a duplication of icons in the Status Bar.
- Corrects problem where an Exterior boundary had to be created before an Interior boundary could be saved within the Exterior boundary. Now boundaries can be created in any order.
- Corrects problem introduced in v1.30 where non-default mapping locations were not deployed correctly in jobs or saved correctly through power cycles. Note: non-default mapping locations are unique to the vehicle they are created for.
- Corrects problem where the warning to not autosteer in reverse was displayed on all AutoSteer systems at job start. Now the warning is only displayed when the system has a pivoting hitch.
- Multiple changes to the User Interface to improve functionality and ease-of-use.

Matrix® 908 v1.30

February 2023

Associated Documentation:

- Quick Start Guide 98-01586 R2
- User Guide 98-01578 R3
- Product Registration Bulletin 98-01585 R0
- North America Warranty & Registration Bulletin 98-01587 R0
- Software Update Instructions 98-01577 R4

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New Features:

- Supports the creation and saving of multiple Vehicle profiles
- Guidance Width resolution when operating in Metric units (only) has been changed from 0.1 m (10 cm) to 0.01 m (1 cm)
- Area values reported in the popup shown after closing a boundary and in the job summary page now have 2-decimal place resolution
- The prefix 'Job:' has been appended to the beginning of the job name displayed in Job Manager and in the Menu and Information Bar, to help distinguish an auto-named job from the current date and time.
- Adds audio feedback when enabling/disabling ASC by pressing the vehicle chevron or using the Status Detect switch
- The GNSS Heading Filter Strength default value has been changed from 3 to 5
- GNSS status information has been added to the About Page, and the GNSS Receiver serial number is now included with the rest of the GNSS Receiver information on the About Page and the GNSS Status Information page. Displaying the serial number makes it easier to initiate receiver upgrades and TerraStar® subscriptions.
- Supports the following Section Driver Module(SDM)/Smart Cable part numbers:
 - Rauch SmartCable 78-05090 v10.01 as used in kit 90-02980
 - Bogballe SmartCable 78-08052 v5.57

Fixes:

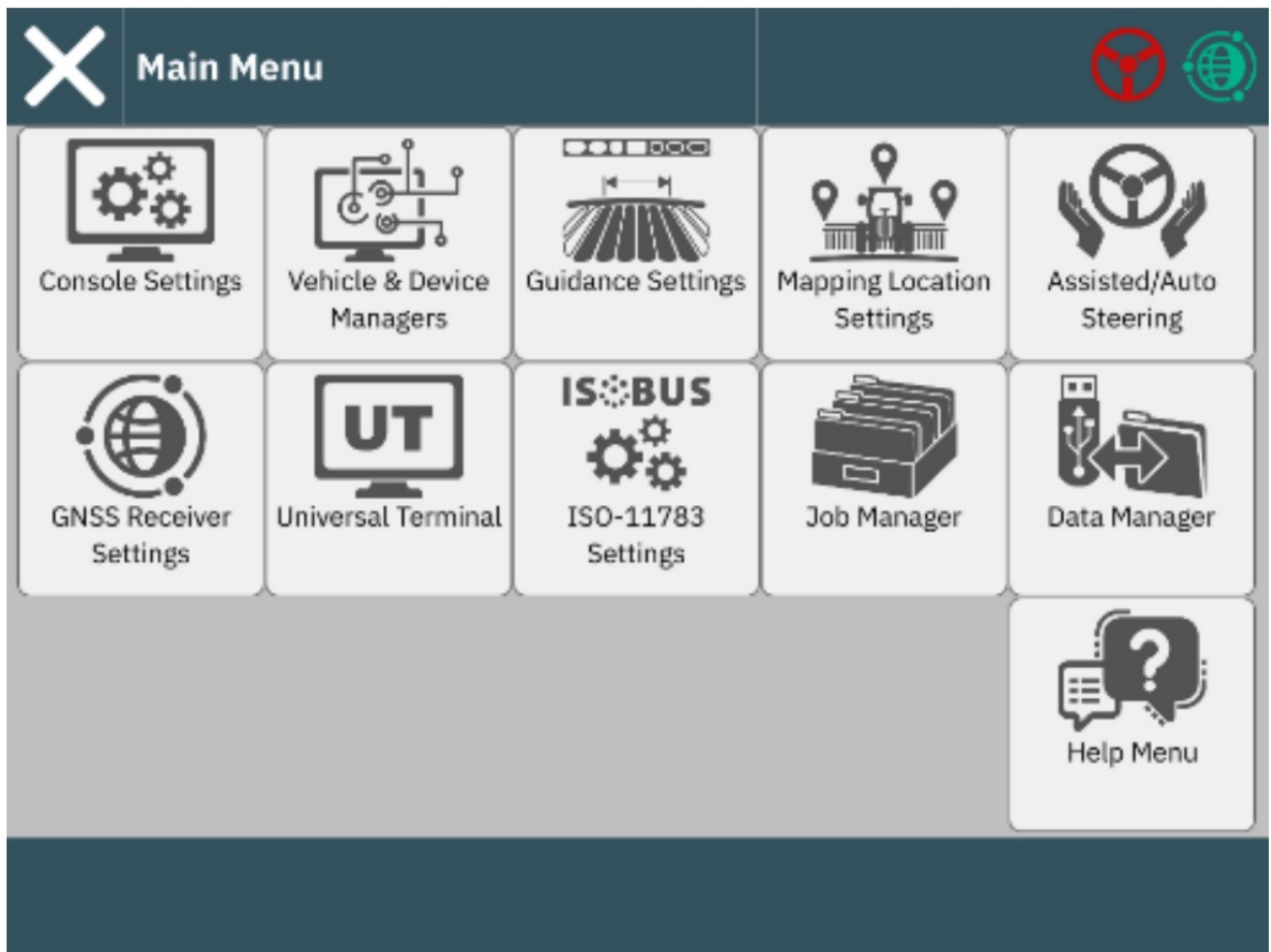
- Corrects problem where the ASC Delay Timer values (DDI 205 & 206) sent by some ISOBUS Control Functions while in a job were not executed unless power was cycled to the system.
- Changed the minimum backlight brightness level to a significantly lower brightness to reduce glare and make night-time operation more comfortable
- Corrects problem where the keyboard did not support Cyrillic options when the language was set to Ukrainian
- Significant reduction in component noise from the console when the backlight is at higher brightness levels
- Multiple changes to the User Interface to improve functionality and ease-of-use.

Matrix® 908 v1.20

September 2022

Associated Documentation:

- Quick Start Guide 98-01586 R2
- User Guide 98-01578 R2
- Product Registration Bulletin 98-01585 R0
- North America Warranty & Registration Bulletin 98-01587 R0
- Software Update Instructions 98-01577 R3



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New Features:

- User Interface/User Experience changed to a card-based system similar to that used in many consumer electronic devices. This makes navigation through the console menus more intuitive, and faster
- Support for single product prescription map-based applications when connected to supported ISOBUS rate controllers.
 - An unlock is required for Prescription capabilities.
 - Single product/single product blend only
 - Supported prescription file type is ISOXML only, compliant to ISO 11783-10 Version 4.
 - TeeJet Engineering must work with the FMIS developer to create an FMIS export template that assures a TeeJet compatible ISOXML prescription map export from the FMIS.
 - Importing an ISOXML file into the Matrix® 908 console will delete all existing jobs on the console and replace them with the imported job(s).
 - Exporting an ISOXML file from the Matrix® 908 removes all existing jobs from the console.
- Supports TeeJet IC45 v1.00 & v1.02 and IC18 Sprayer v2.03

- Supports UniPilot® Pro demo mode.
- Increases the size of the UT data mask and softkeys
- Supports the TeeJet proprietary CAN speed message on the TeeJet bus. Commonly used for CAN speed for connected Radion consoles and similar Automatic Section Control devices.
- Introduces an unlock code that is required for spreader configurations with more than 2 booms on Application Mapping and TeeJet CAN (SDM-type) devices. There may be a charge for the unlock code. When connected to an ISOBUS spreader controller with more than 2 booms a Spreader unlock for the Matrix® 908 is not required and the spreader controller manages any unlock implications related to the number of booms.
- Added an 'all sections are the same width' feature to Device setup to reduce the number of steps to create a new device when all sections are the same width.

Fixes:

- Multiple changes to increase system robustness and eliminate problems where the console may stop responding to operator input while setting up vehicles & devices, making changes to connected device settings in the UT, when viewing the GNSS Stats page, and during power-up and/or power-down.
- Corrects problem where the on-screen guideline and guidance prompts were not accurate for the Guidance width set by the operator when operating in Dynamic Adaptive Curve guidance mode.
- The maximum value for the Heading Smoothing filter has been increased from 5 to 10 so that coverage data is smoother on machines operating on rough surfaces and/or when there is a large backset to the boom.
- Corrects problem where the export of (all) jobs from a console with a large number of jobs and job data successfully moves the jobs to the USB Drive but it fails to remove the jobs from Job Manager.
- Corrects problem where the Device Details summary page is not populated correctly if the device has an odd number of boom sections and 5 or more boom sections
- Corrects problem where after running correctly for a period the console may show that the Control function (e.g., IC35, IC45) has disconnected and reconnected again.
- Corrects problem where the connection of a new implement ECU (e.g., IC35, IC45) that is in an alarm state when the Device Review is completed may cause the console to stop responding.
- Corrects problems where it was not possible to set all the digits of a minimum value setting for a device connected to the UT, if the minimum is already set to > 0.
- Corrects problem where it was not possible to enter decimal places in the setup parameters for a device connected to the UT if the localization uses commas for the decimal separator.
- Corrects problem where the Applied Rates or Coverage data layer does not update when first switching between the two layers.
- Improved logic in the boundary mapping feature to better handle cases where the Position Quality falls below the user set requirement.
- Corrects problem where the Total Application Width shown on the Device Details page sometimes did not round correctly when operating in US units.
- The Slider used to adjust settings such as Volume & Brightness is significantly improved making coarse and fine adjustments fast and accurate.
- Ball-and-Bar toggle controls in setup functions have been changed to check boxes to make setting changes easier, and some labels have been changed to make the purpose of the setting clearer.
- User is prevented from moving to the 'next section' page unless data for the existing section page has been

entered.

- Corrects problem where it was not possible to exit out of a settings list without selecting the current setting again, or an alternate setting.
- Corrects problem where the Station ID reported in the GNSS Stats page for TerraStar®-L and TerraStar®-C PRO were reported as '0'. Now reported as 'TSTL' and 'TSTR' respectively.
- Corrects problem where the last mapping location could not be deleted.
- Increased font size for better readability on setup screens and slide-out menus.
- Adjusted colors for better readability on setup screens and slide-out menus.

Matrix® 908 v1.11

March 2022

Associated Documentation:

- Quick Start Guide 98-01586 R1
- User Guide 98-01578 R1
- Product Registration Bulletin 98-01585 R0
- North America Warranty & Registration Bulletin 98-01587 R0
- Software Update Instructions 98-01577 R1

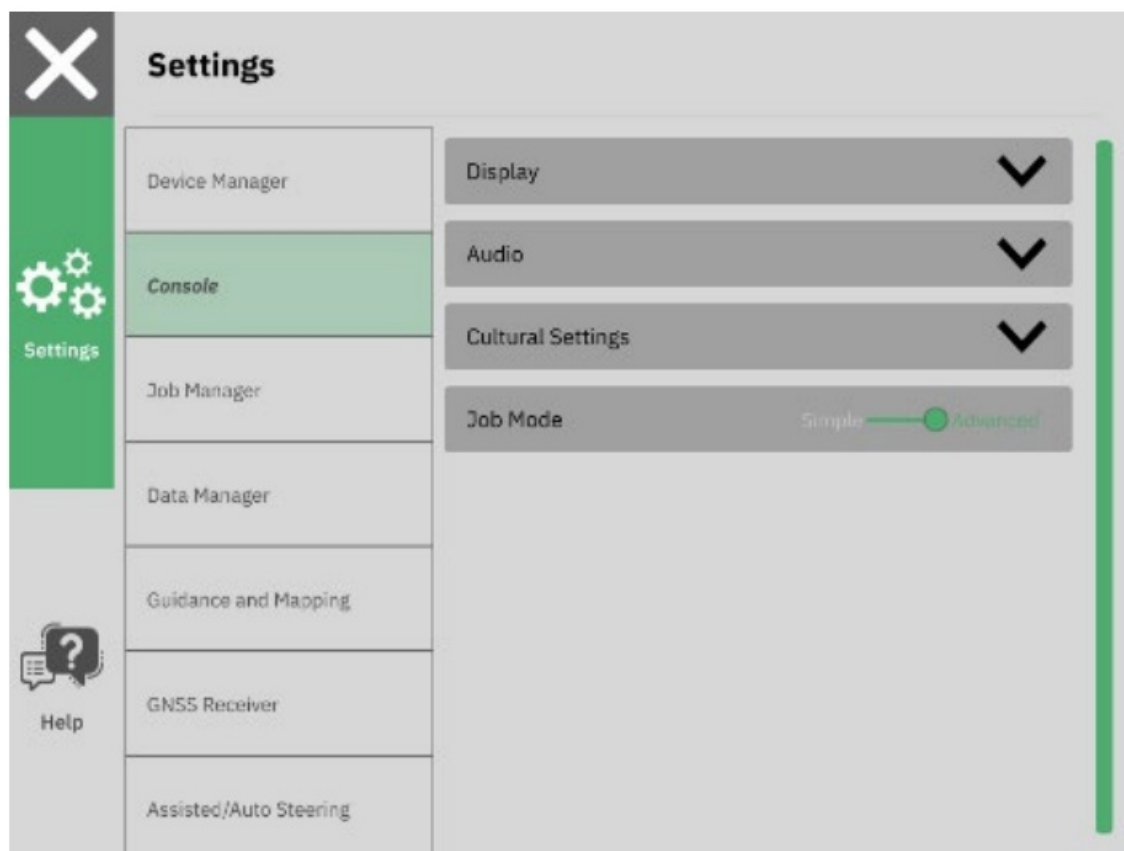
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NOTES: If a feature is not explicitly stated in this or previous release note documents it is not currently supported

by Matrix 908.

Matrix® 908 has built-in ISOBUS TECU functionality and is currently not compatible with ISOBUS systems that already include a TECU e.g. an ISOBUS equipped tractor.



Fixes:

- Corrects problem where the system may stop responding while reviewing or making changes to device configurations.
- Corrects problem where the system may stop responding while changing ISOBUS UT numeric input values.

Matrix® 908 v1.10

January 2022

Associated Documentation:

- Quick Start Guide 98-01586 R1
- User Guide 98-01578 R1
- Product Registration Bulletin 98-01585 R0
- North America Warranty & Registration Bulletin 98-01587 R0
- Software Update Instructions 98-01577 R1

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New Features:

- New Languages: Bulgarian, Czech, Danish, Greek, European Spanish, French, Hungarian, Italian, Latvian, Dutch, Romanian, and Ukrainian
- Feature Unlock
 - ISOBUS Basic – unlocking allows the Matrix® 908 to operate as a Universal Terminal (UT) for supported TeeJet devices only (at this time). Unlock codes can be entered in the User Interface.
- TeeJet DynaJet® IC7140 v1.21 support through Universal Terminal (UT)
- ISOXML file support.
 - Importing an ISOXML file will replace existing jobs with the imported jobs. Existing job data will be lost.
 - Prescription maps are not supported.
 - Exporting an ISOXML file removes all existing jobs from the console.
 - Exported data will include geo-referenced coverage and job summary data. Jobs using a supported ISOBUS rate controller will include geo-referenced rate data.
- Customizable Lookahead time – user can set the lookahead time that is applied when manual guidance is being used
- Accumulated AutoSteer Nudge Offset Distance option added for display on Guidance Bar for systems with FieldPilot® Pro/UniPilot® Pro
- Section Driver Module (SDM) support for SDM v1.02, v2.03, v3.01, & v4.01
- Screenshot function captures screen images to a USB Drive
- TeeJet ISOBUS Boom switchbox 78-00052 support. Note: this switchbox works with compatible TeeJet ICxx rate controllers only.

Fixes

- Corrects problem where GNSS coordinates with negative Latitude and negative Longitude values prevented jobs from being run
- Corrects for situations where boundaries and coverage maps can have jagged edges when operating on uneven terrain by using a user adjustable filter on the heading data
- Corrects problem where the booms on a pivoting hitch device may not be correctly positioned behind the vehicle when resuming forward movement after being stopped
- Corrects problem where the console may stop responding when in a job or when viewing the GNSS Stats page
- Corrects problem where the area reported in the pop-up message when closing a boundary may not be accurate for the boundary just completed
- Corrects problem where the boom graphics in the Guidance page could be errant if the boom configuration is changed without following the reconfiguration with a power cycle
- Corrects problem where the Universal Terminal (UT) Data Mask may flash (momentarily go blank) while in a job. This behavior was most prevalent with systems containing an IC35 and DynaJet® IC7140.
- Corrects problem where device boom sections were sometimes errantly turned on again after first being turned off at the close of a job
- Corrects problem where device boom sections momentarily turned on when a job was opened while the vehicle was moving
- Corrects problem where lateral antenna offsets were being applied twice on systems that included an SCM Pro for UniPilot® Pro/FieldPilot® Pro.

- Corrects Guide Path placement based on Autosteer availability
 - The Guide Path is now centered on the boom (previously centered on the Pivot Point), for vehicles that do not have UniPilot® Pro/FieldPilot® Pro; and Cross-Track Error is based on the same boom position
 - Vehicles with UniPilot® Pro/FieldPilot® Pro still guides/displays Cross-Track Error based on the Pivot Point.
- Prevents user from creating a boundary when the GNSS quality does not meet the Position Quality Requirement specified by the user
- Corrects problem where there was a high-frequency flicker in the display
- Prevents the user from creating an Autosteer vehicle profile name that starts with a number. Autosteer profile names must start with a non-numeric character
- Corrects problem where SCM Pro Tilt corrected GNSS position data was being used when the Public Liability Disclaimer Notice for UniPilot® Pro/FieldPilot® Pro had been declined by the user
- Prevents the user from attempting to close an Interior Boundary or Exterior Boundary that is smaller than the minimum allowed (25 m2)
- Reorganized and clarified Help-> About page
 - SCM Pro version information moved from Assisted/Auto Steering page
 - Updated the software component names listed under Software and Firmware Version Information to user-friendly names
 - Includes SDM version
 - Disk Space Remaining value limited to whole numbers (integer)
- Multiple changes to the user interface including headings, pop-ups and text strings to improve appearance, visibility, night mode operation, and better handle language options
- Removed the Automatic Section Control (ASC) toggle from the Quick Adjust menu
- Removed the Layers button from the Feature Bar for devices that do not utilize the Layers functionality
- Corrects inconsistency in the number of decimal places displayed between the values displayed in the Guidance bar and the values displayed in the user selection cards for the Guidance Bar
- Corrects problem where the GNSS receiver would be configured when entering the GNSS settings page

Matrix® 908 v1.02

October 2021

Associated Documentation:

- Quick Start Guide 98-01586 R1
- User Guide 98-01578 R0
- Product Registration Bulletin 98-01585 R0
- North America Warranty & Registration Bulletin 98-01587 R0
- Software Update Instructions 98-01577 R0

NOTES: If a feature is not explicitly stated in this or previous release note documents it is not currently supported by Matrix 908.

Matrix® 908 has built-in ISOBUS TECU functionality and is currently not compatible with ISOBUS systems that already include a TECU e.g. an ISOBUS equipped tractor.

Fixes

- Corrects problem where translations for AutoSteer options do not appear

Matrix® 908 v1.01

September 2021

Associated Documentation:

- Quick Start Guide 98-01586 R1
- User Guide 98-01578 R0
- Product Registration Bulletin 98-01585 R0
- North America Warranty & Registration Bulletin 98-01587 R0
- Software Update Instructions 98-01577 R0

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Matrix® 908 has built-in ISOBUS TECU functionality and is currently not compatible with ISOBUS systems that already include a TECU e.g. an ISOBUS equipped tractor.

New Features:

- Advanced Job Mode
 - Multiple jobs can be created, custom named, saved, appended, and deleted
 - Boundaries and guidelines from an existing job can be copied into a new job so a user can easily use them when running a new operation in the same field
- Support for a single Section Driver Module (SDM) or device that emulates an SDM (ex: Radion 8140)
- New Languages: Polish, Central/South American Spanish, Brazilian Portuguese, US English, and German
- Job Details from the Status Bar – press the Job Name in the Status Bar to provide access to:
 - Total Arable Land
 - Exterior Boundary Area
 - Number of Exterior Boundary Polygons
 - Interior Boundary Area
 - Number of Interior Boundary Polygons
 - Total Applied Area
- Status switch direct input into console can be used to:
 - Turn Applied Alert Device mapping ON/OFF (no SDM), or:
 - Toggle ASC between Auto and Manual when the system has an SDM
- Customizable boundary names
- Customizable mapping location for mapping boundaries
- AutoSteer status messages added to the Status Bar
- Support for 4-wheel steering (4WS) mode.

NOTE: 4WS support is strictly limited to OEM applications. Generic retrofits on 4WS machines are not

supported.

- QR codes for links to Product Registration web pages
- QR codes for links to the User Guide
- Pop-up message if user enters a job before the discovery process for SCM Pro (UniPilot® Pro and FieldPilot® Pro) has completed
- Display of the SCM Pro version in the User Interface
- Pop-up message when GNSS is lost, or the Quality Indicator is below that required to meet the Position Quality Requirement setting
- ISO 11783 File Server functionality

Fixes:

- Changed the range of the AutoSteer Nudge function to 1"-18" / 1 cm – 50 cm with defaults of 4" / 10 cm
- Dynamic Adaptive Curve guide paths are now retained in the job through power cycles
- Corrects problem where GLONASS & QZSS constellations were not enabled by default in new consoles.
NOTE: users updating from v1.00 will need to manually turn these constellations on in Settings-> GNSS Receiver-> Advanced Settings
- Corrects problem where the last mapped boundary could not be deleted
- Corrects problem where the vehicle chevron and the boom on a fixed mount device were not shown in the correct location when travelling in reverse
- Corrects problem where the guidance directional arrows in the Guidance bar were sometimes not being displayed
- System now defaults to Straight A-B guidance mode when starting a new job
- Changed the default overlap % in the Device Wizard to 100%
- Device Wizard graphics for the Delay On & Delay Off times are now more intuitive
- Pop-up warning is displayed if user tries to close a job that has an unfinished boundary
- Corrects problem where the direction of an AutoSteer Nudge was not displayed to the user
- Corrects problem where AutoSteer would not disengage if an uncommon circumstance resulted in a new guide path instantly becoming the active guide path while AutoSteer is engaged
- Corrects problem where the Device Wizard would allow the user to enter Delay On and Delay Off values < 0.2 sec. but the system would save them as 0.2 sec. 0.2 sec. is the minimum required for correct system operation, and the values can now only be set to 0.2 sec. or higher
- Corrects problem where the Device Wizard would sometimes require a power cycle and second confirmation that the target device it is to be the active device
- Corrects problem where systems with a single frequency GNSS receiver would sometimes errantly list TerraStar®-L as a Position Quality Requirement option
- Corrects problem where the icons in the action bar did not change to white when night mode is active
- Corrects problem where the system would errantly display a 'Calibration Aborted' pop-up message after successfully completing a standalone Tilt or Wheel-Angle Sensor calibration
- Corrects problem where it was sometimes possible to open a job that is further away than the current UTM zone or either UTM zone adjacent to the current UTM zone
- Corrects problem where the system would stop responding if a perfectly straight guideline was created when set to Dynamic Adaptive Curve guidance mode
- Multiple changes to headings and text strings to improve appearance and better handle language options

- Corrects problem where some pages could be dragged left or right when not appropriate

Matrix® 908 v1.00

June 2021

Associated Documentation:

- Quick Start Guide 98-01586 R1
- Product Registration Bulletin 98-01585 R0
- North America Warranty & Registration Bulletin 98-01587 R0

NOTE: If a feature is not explicitly stated in this document it is not included in this release.

Key Features and Benefits:

- Global first Release of v1.00 software for Matrix® 908 console
- Manual Guidance Modes
 - Straight A-B
 - Dynamic Adaptive Curve
 - Guide path is not retained through power cycle
 - Circle Pivot
 - Azimuth
- Internal expandable GNSS receiver with multi-constellation dual frequency RXA-52 antenna
 - Base units are single frequency supporting GPS, GLONASS, & QZSS constellations
 - Upgrade options to add:
 - Galileo constellation
 - Galileo & BeiDou constellations
 - Dual Frequency
 - Dual Frequency & TerraStar®-L (subscription required)
 - Dual Frequency & TerraStar®-C PRO (subscription required)
- Assisted/Automatic Steering
 - Supports FieldPilot® Pro Hydraulic Steer Vehicle kits and UniPilot® Pro vehicles
 - Requires SCM Pro v5.2.34851 (upgrade details coming soon)
 - FPP/UPP kits for Matrix GS/Aeros will require additional adapter cables to operate w/ Matrix® 908 (details coming soon)
 - Includes a Nudge function for Straight A-B & Azimuth Guidance modes
- TwinView mode splits the screen simultaneously displaying Vehicle View or Field View with the UT View
- Boundaries – Internal & external boundaries supported
- Simple job mode without job reports
- Supported device applications
 - Applied Area Alert Device
 - Straight boom sprayer
 - Spreader

- TeeJet ISOBUS controllers with Automatic Section Control
 - IC35 v1.00
 - IC38 v2.00e
- Automatic Section Control (ASC) operation at 10 Hz
- Vehicle model supports
 - Fixed mount implements
 - Trailed (pivoting hitch) implements
- Reverse Sense input (5V-12V) directly into console (product application while in reverse is not supported)
- Localization options:
 - English & Russian languages
 - US & Metric units
 - Local Time Zone
- Application Rates [As-Applied Rates] map layer
 - Overall range of application rates is divided into 10 groups
 - Each group is mapped using a solid color selected from an associated color gradient set

Customer Support


English-US

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Documents / Resources

	<p>TeeJet TECHNOLOGIES MATRIX 908 GPS Guidance System [pdf] Instruction Manual 98-01586 R2, 98-01578 R3, 98-01585 R0, MATRIX 908, MATRIX 908 GPS Guidance System, GPS Guidance System, Guidance System</p>
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References

- [Welcome | TeeJet® Technologies](#)