

# Reader Assistant Release Notes

For Version 1.1.1

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These release notes describe new characteristics of Reader Assistant version 1.1.1, relative to the previously released version: 1.0.14

This version of Reader Assistant supports most of the new commands introduced to the Mercury5e ("M5e") and M5e-Compact ("M5e-C") modules in firmware release 1.1.1 and has been tested against this firmware release.

Version 1.1.1 of Reader Assistant has been designed to work with version 1.1.1 firmware for Mercury5e (M5e) and M5e-Compact (M5e-C) modules, and will not work optimally for any previous firmware release. If you have a previous release of firmware, please obtain the appropriate version of Reader Assistant to use with it, according to the following table

Firmware Version	Reader Assistant Version
3.3.43 (Mercury4e)	1.0.11
1.0.31 (M5e only)	1.0.11
1.0.32 (M5e-Compact only)	1.0.11
1.0.34 (All M5e family)	1.0.12
1.0.37 (All M5e family)	1.0.13
1.0.37 (All M5e family, including M5e-EU)	1.0.14
1.1.1 (All M5e family, including M5e-EU)	1.1.1

Reader Assistant does not adjust its functionality based on the version of firmware in use on the module (although it does adjust for the module hardware capabilities). For this reason, it is best to use the version of Reader Assistant that was created for a specific version of firmware. For example, Reader Assistant version 1.0.11 is best used with firmware version 1.0.31 for the Mercury5e and the version 1.0.32 for the M5e-Compact.

Early versions of Reader Assistant supported the M4e module family. In later versions, support for the M4e family was not removed, but no effort was made to maintain compatibility and software validation testing was not performed against an M4e module. The last Reader Assistant version to be tested extensively with an M4e module was version 1.0.11 (with firmware version 3.3.43).

## Changes to Support Features of Firmware 1.1.1

Many features of firmware version 1.1.1 are now supported in Reader Assistant. See the Reader Assistant Users' Guide for information on how to configure it to demonstrate these features. The enhancements are:

- In the Advanced option of the **Read/Write** screen, **Search All Antennas** has been enhanced to include all antennas in a configured search list (the search list is created in the new **Ports** screen).
- Reader Assistant can be configured to manage modules that are connected to one or more 1x4 port multiplexers, controlled by the GPIO lines.
- The ability to do a **Read Tag Data** on every tag in the field with one command is supported in this version of Reader Assistant. As with previous versions of Reader Assistant, if tag metadata is requested with a query, all tag metadata is returned.
- Custom commands "LoadImage", "PartialLoadImage", and "BlockReadLock" for Alien Higgs-3 tags are supported in this version of Reader Assistant. (These, and the existing Higgs-2 tag **LoadImage** commands, have been moved to their own **Higgs** screen.)
- The new Ports screen supports creation of a search list as well as per-port settings for read transmit level, write transmit level, and (antenna switch) settling time. The **Status** screen has been enhanced to display the detect status and RF on-time of all permitted logical connections (based on Reader Type selected).
- An option has been added to the **Regulatory** screen to set the maximum hop time.

- New **Advanced Reader** Settings have been added:
  - Ability to enable and disable automatic antenna checking (module will automatically skip over unused ports during a search if this is enabled, and will not transmit into an unused port in static-port configurations).
  - The choice has been added whether to record metadata characteristic in the buffer of the first time the tag was read or the read instance that resulted in the highest RSSI.
- **Gen2 Protocol Setting** options have been added for Gen2 Target and Gen 2 "M" value.

Features of firmware version 1.1.1 that are not supported in this version of Reader Assistant include the following:

- Only for the specific case of the TagLink reader are 1x2 port multiplexers supported (multiplexers controlled by one GPIO Output line, but not both). Firmware version 1.1.1 allows the user to specify which individual GPIO output lines control multiplexers. This setting is not directly under control of the user in Reader Assistant.
- New Select option 0x5, used for non-selective commands that require Access Passwords, is not supported in Reader Assistant. As with previous versions, use one of the other Select options with a data length of "0" to essentially turn a selective query into a non-selective one.
- As for previous versions of Reader Assistant, the user has the choice for no tag metadata to be returned, or to have all tag metadata information be returned when Read Tag Multiple is performed. The firmware allows the user to select which metadata they wish to obtain when the unload the buffer, but this level of control is not directly under control of the user in Reader Assistant.
- None of the custom commands for Hitachi Hibiki tags are supported in this version of Reader Assistant.
- The firmware offers a "set reader" option to create new buffer entries if the EPC is the same as a previous entry, but the data field is not (when Read Tag Data is embedded in a Read Tag Multiple command). This version of Reader Assistant leaves this setting in its default state (data field is ignored when deciding if an entry is a duplicate or not).

- The new status indicators, Get\_Noise\_Floor, and Get\_Noise\_Floor\_with\_TX\_on are not supported with Reader Assistant

## Ease of Use Changes

The following changes have been made to enhance the ease of use for Reader Assistant:

- The Com port list now refreshes each time it is opened (in previous versions of Reader Assistant the user would have to re-start Reader Assistant for it to notice Com port changes).
- **Synch Reader Assistant** has been added to the Action menubar list. Use this function to upload a module's configuration into Reader Assistant. (The command "Restore Saved Settings" will reset the module and then apply settings stored in the configuration file.)
- A new menu to select "Reader Type" has been added to the Config menu. It changes port and GPIO labels to agree with the labels on TagLink and USB readers. (In previous versions of Reader Assistant, the user had to know which internal module ports corresponded with which external reader ports and which GPIO line(s) controlled internal antenna switches.)

## Bug Fixes

The following "inadvertent features" have been corrected in this version of Reader Assistant:

- When performing a **Selective Operation** and checking the "Select Tags that do not meet the Select Criteria" checkbox the value of the "Address (bits)" field were not being passed (they were always 0x00). It works correctly, now.
- Previous versions of Reader Assistant misrepresented negative temperatures. This has been corrected.

# Operational Notes

The following caveats apply to this version of Reader Assistant

- The communications baud rate is not applied to all functions. The functions that operate at the configured baud rate are as follows:
  - Initial configuration and obtaining configuration information from the module/reader
  - Continuous tag reading in the Read/Write screen
  - Reading contents of flash memory
  - Loading new firmware (erasing and rewriting flash memory)
- The "Synch Reader Assistant" function cannot be used to re-synchronize Reader Assistant when it has been re-connected to a different class of module (M5e to M5e-Compact or vice versa). The user must use "Restore Saved Settings" or close Reader Assistant and re-launch it again for all options to match the new module type.
- Do not use the "X" in the upper right corner of the Com port selection window to close the window. It will close Reader Assistant as well. Use the "OK" or "Cancel" buttons at the bottom of the window instead.
- Although confusing in some contexts, all length fields in Reader Assistant are entered as decimal numbers, all address fields are entered in hexadecimal.
- Users wishing to duplicate the start-up sequence, of Reader Assistant, by observing the commands seen in the serial log will notice the use of an undocumented op code "0x0B" to obtain the value of "Processor Silicon ID" for the Advanced section of the **Firmware** screen. This command, and the information it obtains, are not relevant for the M5e-family of modules and can be safely omitted from start-up sequences.