

Firmware Release for the 8650, Firmware Version V409

February 18, 2015

Summary

This document describes the V409 firmware release on the 8650 platform. The ECO is # 2656. V409 is a general release that contains no new features, however contains two bug fixes related to the support of the -02 hardware revision.

Customers who have devices with serial numbers ending in -02 hardware revisions should only use V409 or higher. Firmware releases less than V409 are unsupported on -02 hardware revisions, and could result in adverse behavior. Hardware revisions of -01 are not affected and any firmware version is acceptable to use with any firmware version.

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Features

No new features added to this release.

Improvements:

SCR # 587 – Backlight timeout could result in unpredictable behavior.

SCR #588 – Meter board warmers continuously written, causing high IIC traffic.

Known Issues

- Comm error rates on modem port may be out of spec. [DETAILS](#)
- SCR#48 - Front Panel Programming Lockout. [DETAILS](#)
- SCR#108 - MBM TCP - Modbus and Telnet errors when Master IP also entered as Slave IP. [DETAILS](#)
- SCR#107 - Web Page inconsistencies with various browsers. [DETAILS](#)
- SCR#103 - Telnet can bump ION connection which launched RMP. [DETAILS](#)
- SCR#156 - Meter reboot due to Invalid TCP SYN Requests. [DETAILS](#)
- SCR#155 - Meter reboot with Invalid ARP Traffic. [DETAILS](#)
- SCR#390 - Digital Output module reports invalid timestamp on power-up. [DETAILS](#)
- SCR#440 - Status bar phase rotation is wrong in 35S mode. [DETAILS](#)
- SCR#433 - Inconsistent force levels between voltage and current harmonics. [DETAILS](#)
- SCR#435 - FTP Calibration folder modified time has inconsistent behavior. [DETAILS](#)
- SCR#401 - Webpage login attempts do not follow advanced security settings. [DETAILS](#)
- SCR#428 - Refreshing the meter's webpage is logged as authorization attempt in IE. [DETAILS](#)
- SCR#454 - NTP time update fails if server is stratum 15. [DETAILS](#)
- SCR#485 – Downgrading from v408 to v402 causes factory file to be deleted. [DETAILS](#)
- SCR#494 - Waveform starting timestamp is sometimes zero'd. [DETAILS](#)
- SCR#502 - With Front Panel password set to be non-zero, the Factory login is not possible. [DETAILS](#)
- SCR#503 - TLC default values incorrect in default template 8650A_V400_FAC_V4.1.0.0.1.dcf [DETAILS](#)
- SCR#494 - Waveform starting timestamp is sometimes zero'd. [DETAILS](#)
- SCR#511 – Web login not accepted if passwords are 9 digits long. [DETAILS](#)
- SCR#531 - Register names can cause buffer overflow. [DETAILS](#)

8650v401 Issue – Comm error rates on modem port may be out of spec.

Symptoms

Comm error rates on the modem port may be slightly out of spec, particularly when using Modbus protocol at higher baud rates.

Workaround

None. Resolving this issue requires a hardware rev to the comm card.

More Information

Severity – N/A

Tracker SCR – None

8650v401 Issue – Front Panel Programming Lockout.

Symptoms

When front panel programming is disabled via the Display Options Module there is the potential for a customer to lock themselves out of their meter. On meters with no Ethernet option, all one has to do is:

1. Disable front panel programming from the Display Options Module.
2. Change all serial ports to a protocol such as DNP or GPS arbiter.

Workaround

Install a comm card with ethernet and re-configure the port settings appropriately. If this is not possible, a factory coldboot is required to recover communications.

More Information

Severity – Major

Tracker SCR – 8650 Specific #48

8650v401 Issue – MBM TCP - Modbus and Telnet errors when Master IP also entered as Slave IP.

Symptoms

Modbus Master and Telnet errors occur when Master IP also entered as Slave IP. (i.e. the master is setup to talk to its self on another connection)

Workaround

This is a test condition and not a real-world use case. Use a different test device as slave device.

More Information

Severity – Major

Tracker SCR – 8650 Specific #108

8650v401 Issue – Web Page inconsistencies with various browsers.

Symptoms

From SCR#107

The Owner, Tag1 and Tag2 fields at the bottom pane of the meters web page are not updated when they are changed using the meters setup page. But the meter does show the change in the Setup page and the Setup confirmation page. The fields will up date when I either hit refresh in the browser and reload the whole page or shut down then restart the browser.

From SCR#106

Attempting to save a large string in the Owner, Tag1 or Tag2 fields will cause an error rather than loading the Setup Confirmation page.

From SCR#105

On the 8800 & 7X50 web pages when an error occurs saving the setup changes from the setup page to the meter the following is printed at the top of the page:

"Warning: Errors occurred during configuration"

This text doesn't appear on the 8600. In the same situation, it prints:
"Sent the following Configuration to the meter"

However, an error message does occur in the field that caused the error within the web form. There is just no error message displayed at the top of the screen.

Workaround

Browsers interpret html code differently. Best results when viewing webpages with Internet Explorer 7. See kb for workaround to 8600 SCR#467.

More Information

Severity – Major

Tracker SCR – 8650 Specific #107, #106, #105

8650v401 Issue – Telnet can bump ION connection which launched RMP.

Symptoms

When RMP is active and all 4 TCP Connections are in use, opening a Telnet session during the RMP download will result in the Telnet session bumping another connection. A situation can occur where Telnet bumps the ION instance which launched the RMP task. If this occurs while RMP is active, RMP will be aborted and the framework paste will fail. The RMP task does not exit properly.

Workaround

In order for this situation to occur, the TCP connections must occur in a certain order (namely the ION Connection initiating the RMP must be last). However, if this does occur and the RMP task aborts but does not exit properly, the framework paste can be completed by issuing an RMP paste TWICE. The first attempt will typically fail with a message of "Unable to reset RMP back to idle", but the second RMP paste will download successfully. (A user may need to free up a TCP connection for ION Setup by exiting the Telnet session that was just opened.)

Another way to force the RMP Task to exit after the RMP was aborted prematurely is to power cycle the meter. However it would seem more desirable to just issue the 2 RMP pastes.

More Information

Severity – Major

Tracker SCR – 8650 Specific #103

8650v401 Issue – Meter reboot due to Invalid TCP SYN Requests.

Symptoms

The meter will reboot due to invalid SYN requests. This can be reproduced with the "TCP SYN Storm from Broadcast" test case.

Workaround

None at this time. Not re-producible in-house as well as it was not reported by any of our customers.

More Information

Severity – Showstopper

Tracker SCR – 8650 Specific #156

8650v401 Issue – Meter reboot with Invalid ARP Traffic.

Symptoms

The meter will reboot due to improper handle ARP request and reply. This vulnerability require two test cases to make it work. First run the "ARP Cache Saturation Storm" and then the "ARP Host Reply Storm".

Workaround

None at this time. Not re-producible in-house as well as it was not reported by any of our customers.

More Information

Severity – Showstopper

Tracker SCR – 8650 Specific #155

8650v401 Issue – Digital Output module reports invalid timestamp on power-up.**Symptoms**

When the input value for a DO module is FALSE and the meter is power cycled, the output timestamp is not updated (reads 0 Unix time). The timestamp will update when the input value transitions to TRUE.

Workaround

None.

More Information

Severity – Minor

Tracker SCR – 8650 Specific #390

8650v401 Issue – Status bar phase rotation is wrong in 3S mode.**Symptoms**

In a 3S system with a standard phase-rotation, the status bar shows the phase rotation as "AB CA" (wrong) instead of the correct "AB BC". If the phase rotation of the system is reversed, the status bar shows "BC BC" (meaningless) instead of the correct "BC AB".

Workaround

None.

More Information

Severity – Minor

Tracker SCR – 8650 Specific #440

8650v401 Issue – Inconsistent force levels between voltage and current harmonics.**Symptoms**

Low magnitude voltage harmonics are forced to zero but in the current channels they are not.

Workaround

None.

More Information

Severity – Minor

Tracker SCR – 8650 Specific #433

8650v401 Issue – FTP Calibration folder modified time has inconsistent behavior.**Symptoms**

The CALIBRATION ftp folder's modified time behavior is inconsistent with how the other ftp folders operate. When a file is updated within any folder except CALIBRATION, the folder's modified time will update. But when the CALIBRATION ftp folder is updated by performing a customer calibration, the folder modified time doesn't change.

Workaround

None.

More Information

Severity – None

Tracker SCR – 8650 Specific #435

8650v401 Issue – Webpage login attempts do not follow advanced security settings.**Symptoms**

When attempting to log into the meter through http in Internet Explorer and with advanced security turned on, the webpage will fail to load after three unsuccessful attempts regardless of what the http lockout register is set to in the security options module. When this occurs, the meter's access denied webpage, which displays

"Protected Object. This object on the 8650 is protected" is shown. The advanced security tracking of invalid attempts and lockouts works correctly in the background - it just isn't linked to the credential prompting. This is a minor problem but could be confusing to users. This issue is browser dependent and is not present in Firefox.

Workaround

If the user refreshes the webpage, the user will be re-prompted for credentials.

More Information

Severity – Minor

Tracker SCR – 8650 Specific #401

8650v401 Issue – Refreshing the meter's webpage is logged as authorization attempt in IE.

Symptoms

With advanced security turned on, the user will be prompted for credentials when trying to access the meter's webpage. If loading of the meter's webpage is cancelled through the credential prompt or by the browser and then the webpage is refreshed, Internet Explorer will use the previously entered user ID with a blank password to initially query the meter in the background, causing an invalid attempt to be logged against the previously entered user. This issue is browser dependent and is not present in Firefox.

Workaround

The scenario for this bug is not likely to occur very often. If it does occur, there is a potential for the user to be prematurely locked out.

More Information

Severity – Minor

Tracker SCR – 8650 Specific #428

8650v401 Issue – NTP time update fails if server is stratum 15.

Symptoms

According to SNTP_RFC4330 [the SNTP standard], valid settings for the peer clock stratum are 1-15.

When the time server is set to broadcast stratum 15 time, the meter will not accept the update. The event log shows "NTP Time Sync Failed". However, peer stratum values [1,14] do function correctly.

Workaround

None.

More Information

Severity – Major

Tracker SCR – 8650 Specific #454

8650V403 Issue – Waveform starting timestamp is sometimes zero'd

Symptoms

Time stamps for a 54x32 sampled waveform can have a starting time of 0 (Jan 1 1970 - 8hrs = Dec 31 1969) when multiple sag swell triggers are generated in rapid succession.

Workaround

None

More Information

Severity – Moderate

Occurrence – Moderate

Quality Center – 8650 - Defect #494

8650V403 Issue – With Front Panel password set to be non-zero, the Factory login is not possible.

Symptoms

When the Front Panel password is set to be a non-zero value, the Factory password is invalid when attempting to log into the Factory terminal (Level 2 access, Factory Login).

Workaround

To avoid this defect the front panel password should be changed back to default (0) for the duration of the factory port access.

More Information

Severity – Minor

Occurrence – Moderate

Quality Center – 8650 - Defect #502

8650V403 Issue – TLC default values incorrect in default template 8650A_V400_FAC_V4.1.0.0.1.dcf.

Symptoms

While investigating TLC for a customer it was noted that the default template values for the TLC module were not set correctly. For example the line length SY and LD are set in the default framework to 12. Other values are incorrect as well, as is seen by the line loss setup screen within IONSetup.

This is not an issue until the customer enables line loss compensation. The main issue is that the documentation states that the customer should "Not change" any of the default parameters, only the ones that apply to their situation.

Workaround

In order to utilize TLC correctly the unused parameters will need to be changed to their default values so that the calculations will work.

More Information

Severity – High

Occurrence – Low

Quality Center – 8650 - Defect #503

8650V403 Issue – Downgrading from v408 to v402 may cause factory file to be deleted.

Symptoms

Downgrading from the new release v403 to v402 or older version will cause the meter to lose its Factory Configuration file. This file contains information such as the meters Cal Constants, and Communication Settings. It is believed that this same behavior exists downgrading from V408 to V402.

Workaround

Do not downgrade your device to a firmware version less than v403. If necessary to downgrade to v402, please follow the KB titled "8650_v403_downgrade_to_v402".

More Information

Severity – Very High

Occurrence – Low

Quality Center – 8650 - Defect #485

8650V403 Issue – Waveform starting timestamp is sometimes zero'd

Symptoms

Time stamps for a 54x32 sampled waveform can have a starting time of 0 (Jan 1 1970 - 8hrs = Dec 31 1969) when multiple sag swell triggers are generated in rapid succession.

Workaround

None

More Information

Severity – Moderate

Occurrence – Moderate

Quality Center – 8650 - Defect #494

8650V405 Issue – Web login not accepted if password is 9 digits long (advanced security)

Symptoms

9 Digit advanced security password is not accepted by the web login in. Passwords of 8 digits function fine. 9 Digits will be accepted by IONSetup.

Workaround

Use advanced security passwords that are not 9 digits in length.

More Information

Severity – Moderate

Occurrence – Moderate

Quality Center – 8650 - Defect #511

8650V407 Issue – Register names can cause buffer overflow.

Symptoms

When viewing labels which are too long, label names can be corrupted and show invalid characters.

Workaround

Limit label names (including those on webpages) to 35 characters or less to avoid corruption.

More Information

Severity – Moderate

Occurrence – High

Quality Center – 8650 - Defect #531

Keywords

8650 V408 DRE Sequencer Chain V407