

## Production Firmware History (Since Version 1.92)

### Description

The following is a listing of firmware changes to the Eaton 9395 UPS product since version 1.92 and date which it was deployed.

#### **Revision 3.16 (Released September 2019)**

##### ***Enhancements***

This is a release specifically for sites with HRG (High Resistance Ground) Source Applications. It contains improvements for kVA sharing between UPMs during ground fault conditions.

#### **Revision 3.14 (Released May 2018)**

##### ***Fixes***

This is a release that addresses fixes for the LCD Display no timing and the HMI Configuration screen only displaying in English.

#### **Revision 3.12 (Released August 2017)**

##### ***New Features***

- This is a Global release for 9395 which includes all of the new features and enhancements that were released for the 9395 thus far and eliminates the need to maintain previous deviation releases that are site-specific.
- It includes the new feature of Service Reminders (Pop-Ups) for 10" HMI (7" HMI not included).

##### ***Fixes***

- The UPM Battery Chargers did not turn on automatically after being manually turned off at the UPM level.
- The unit was generating nuisance alarms when going to ESS mode too quickly from Battery mode.
- Output current load percent displayed from the LCD was inaccurate under an unbalanced load.
- The unit was generating nuisance DCOV alarms at no load during testing of VMMS mode.

##### ***Enhancements***

Distributed bypass output voltage regulation performance was improved.



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## **Revision 3.10 (Released February 2017)**

### ***New Features***

- This is a global release for 9395 which includes all of the new features and enhancements that were released for the 9395 to date. This release eliminates the need to maintain previous deviation releases which are site specific.
- Predict Pulse Battery Test and Data packet support.

### ***Enhancements***

- Sensitivity of the “Check Bypass Switchgear” and “Check Bypass 1” alarms were improved.
- Improvements to protect components against thermal damage due to high ambient over temperature.
- Improved detection and reaction to Single Phase “Over / Under Voltage” conditions.
- HMI System Overview Screen; External UPSs and UPM4 display failure status when system is on battery mode.
- Predict Pulse Battery Test time calculation and accuracy between tests was improved.
- New calculation for determining the number of UPMs not in VMMS when VMMS is enabled.
- Improved Inverter “Phase Current Balancing” between UPMs to reduce nuisance “Check Inverter” alarms.

## **Version 3.04 / January 2015**

### ***New Features***

None.

### ***Enhancements***

Update to the Hot Sync Algorithm. While inverter load sharing algorithms are working correctly, there are situations where an individual UPM fails to detect and make corrections when it is carrying a disproportionate amount of phase currents that do not result on overall power imbalances. An enhancement to existing load share algorithms was put in place to bring imbalances back to compliance well before it reaches a Check Inverter alarm level is being made, regardless of the underlying mechanism that may have originated the imbalance in the first place.

The imbalance of UPM currents manifests itself as circulating reactive current inside the UPS. The firmware upgrade improves the reactive load share control loop, by adding individual current feedback to the inverter voltage controls. This HotSync load share control improvement will ensure quick response to load imbalances.

## **Version 3.02 / September 2014**

### ***New Features***

Releases ESS+ feature which enables a UPS operating in ESS mode to also correct for up to 275 kVA worth of non-linear output loading to correct the power factor impressed upon the utility through active current correction.

### ***Fixes***

Corrected for the CTO and Serial numbers being cleared during a power cycle; Corrected the UPM boards locking up during a section reset which only occurs during a heavy service routine; Corrected the default iTHD set point; improved ESS function ability allowing for ESS to sync to the output as an option; improved ESS Storm detection response; corrected touch screen operation related to: Battery Log screen while on battery; Battery Meter screen while in Service mode; Illegal Controller S 1 N 1 alarm; Added UPM Power Share Screen; Profile screen saved during a logic reset; Backlighting screen; Statistic screen saved during logic reset; Consumption screen saved during a logic reset; Shutdown of one UPM instead of entire UPS; Output Voltage value in header does not match Meter screen.

## **Version 2.20 / July 2014**

### ***New Features***

None.

### ***Fixes***

Fixes for touch screen version => Corrected issue related to the Illegal Controller S 1 N 1 alarm through improved Modbus communication from the touch screen controller to the touchscreen. Only affects touchscreen versions of the product and only communications to the touchscreen.

## **Version 2.18 / April 2014**

### ***New Features***

Enables either a 7 inch or 10 inch touch screen display, Enables ESS to sync to the output as an option to sync to bypass; Allows flashing of touch screen driver through the Service Port; Option for shutting off just one UPS, when distributed bypass parallel system is on bypass.

### ***Fixes***

- Fixes for touch screen version => Corrected system efficiency when in ESS; Corrected available kVA in local UPM detail on touch screen; Corrected output voltage header to match displayed meter value; Correct bug which sometimes allowed a user to shut down entire UPS when all they wanted was to shut down one UPM; Corrected statistic screen, profile screen data, and consumption data so data is saved during a power reset; Corrected issues with display when a UPM was placed into Service Mode; Corrected user option to command a single UPM on-line when others were in bypass when in Service Mode.
- 9395 VMMS => Other UPM does not start battery test when leaving suspend state.

## **Version 2.16 / March 2014**

### ***New Features***

Provides an option for gapping the inverter output when hitting inverter current limit when transitioning out of ESS; provides an option for UPMs to sync to the output versus the bypass when operating in ESS; Allows functionality with the HRS hardware enabled control boards.

### ***Changes and Enhancements***

Updates operation with sync boxes specifically related to implementation in the EMEA region.

## **Version 2.12 / May 2013**

### ***New Features (Primarily for 10-inch Touch Screen Support)***

Parallel System Support; Control; Metering; System Overview; Languages; Profile Screen; Statistics; Screen; Energy Savings; Single/Dual Feed Mimic; Battery Discharge Log; User Settings; Configuration; Service Tool; Clean Screen; Flash from XCP Service Tool; Alarm (Internal Comm Failure if HMI bit is not set); 10" Touch Screen Display; Remote Display.

### ***Fixes***

Very limited / low possibility potential for load loss when input phase is lost; Add passcode protection for control screen and ESS/VMMS/HRS configure screen.

## **Version 2.08 / November 2012**

### ***New Features***

Better remote status monitoring for ESS, and UPS contactors; plus XCP ESS command; New VMMS rotation feature for parallel systems; Now VMMS rotation applies to the UPS level, not just the UPM level; Optional active rectifier even harmonics suppression for higher demanding environments; More versatile auto restart for RT UPS; XCP Status reported is inadequate for customer implemented UPS monitoring of K1-K3 status and ESS status; Connectivity (PXGX) Display does not adequately depict System Operation and Status for ESS and VMMS; Rectifier: 2nd, and higher even harmonics too high for grid power supplier; Auto Restart now works in all modes.

### ***Fixes***

Modbus card when in ESS mode shows UPS protected; Modbus card firmware reports correct status 9395 XCP Current Bar Chart Meters corrected; Slow Detection Time of Single Phase Sag when operating in ESS mode; 9395 275kVA, UPM charger off command (was not charging batteries for 3 months in some cases); Transfers from Utility to Generator and Generator to Utility while using a Load Sync Control box; Pushing UPM OFF for last UPM makes UPS go to bypass.

## **Version 1.98 / March 2012**

### ***New Features***

Provide Asynchronous transfers to bypass with and without load sync control capability; improved distributed bypass capacity and ESS operation; Includes functionality from version 1.45 for High Resistance Ground applications.

### ***Fixes***

With two 9395 RT units connected with a Sync Box and dual sources, the history log of the slave system fills with "Out of Sync" notices; 9395 battery charger going unstable when charging wet cell batteries; now there is need to set EEP xxxx manually.

## **Version 1.96 / December 2011**

### ***Fixes***

Fewer PWMCountsPerVDC causes less gate power and more output voltage THD; Version 1.94 created ATE test failures (Inverter IGBT GP out of range) The output voltage; THD increased up to 0.6%; Status information compatibility for SBM version 2.10; Version 1.94 firmware does not send correct state / status to SBM version 2.10 (and older), and the PXGX card when used in a parallel system; ESS issue: Output "UV" detection changed to slightly filtered metering, slightly slower than Bypass "UV"; Also Output UV detection while in ESS is now the same speed as the Double Conversion Output UV detection; After full battery shutdown and transfer to bypass scenario, unit will transfer back on-line then back to bypass repeatedly due to battery voltage level recovering due to unloading.

## **Version 1.94 / November 2011**

### ***New Features***

1100kVA IOM (EMEA design) support; CSB Real Time Clock replacement for obsolete part, same as in 1.92; A building input command to make UPS go to or keep on battery; A building to put UPS into ESS (from normal, or VMMS; Hide N-meter, if Line to Line meters selected; High Resistance Ground fault detection, and alarm; Mandarin and traditional Chinese language corrections; VMMS: Minimum Number UPMs may now differ from UPS to UPS.

### ***Fixes***

Incorporates all changes relative to customer Equinix issues in NY which was released to them in revision 1.93. These changes revolved around product operation with a floating E12 and operation with a Load Sync controller.