



Nuvation Energy BMS Faraday Update 2 Software

Release Notes

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BMS Software Version: Faraday Update 2
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Revision History

Version	Details	Date
0.1	Preliminary release for Faraday Update 2 firmware	2024-12-10
0.2	Fix missing trigger bitfield and register map differences	2024-12-12
0.3	Adding balancing and UVLO mismatch failures and fix fault bit map entries	2025-02-22
1.0	Final release after functional safety review	2025-03-09
1.1	Added additional known issues and added OI screenshots	2025-10-27

1. Introduction

This document provides a summary of software changes for the Faraday Update 2 Software release.



Nuvation Energy Software Release Naming Convention

Nuvation Energy BMS software releases have *names* along with *version numbers*. The release names are in alphabetical order to easily identify newer releases. For example: Ampere -> Babbage -> Curie.

Faraday Update 2 applies to the following stack-level products only:

- G5 High-Voltage BMS

2. Identification

The Faraday Update 2 software release can be identified using the following information:

Table 1. Faraday Update 2 Release Identification

Main Firmware Version	Main MCU CRC
5.9.3	38167



Finding the currently installed version

To find the current version of software installed on your Battery Management System:

- At the stack-level, check the *About* screen in the Operator Interface.



The firmware upgrade for the Main MCU can be performed in the field using the G5 Operator Interface.



We thrive on your feedback and what we build is driven by your input. Please submit support tickets to support@nuvationenergy.com.

3. Faraday Update 2

The software changes for Faraday Update 2 are with respect to the Faraday Update 1 software release for the G5 High-Voltage BMS.

3.1. Upgrade Behaviour Change

Faraday Update 2 introduces breaking changes from Faraday Update 1 which prevents the G5 Stack Switchgear from factory restoring to Faraday Update 1. This means, the upgrade is a one way upgrade and will update the factory restore point to Faraday Update 2.



Please do not power cycle the G5 Stack Switchgear while the firmware upgrade is in progress. The upgrade process may take up to 5 minutes to complete.



Please ensure UVLO is **disabled** while a firmware upgrade is in progress. This is due to a known issue around the G5 Stack Switchgear sometimes not powering up when UVLO is enabled.

Once the upgrade is complete, the BMS should be power cycled before attempting to exit Service-Lockout due to the following known issue: [Section 3.4.4, "Enabling Backup Warning Faults Causes Self-Check To Fail"](#).

3.2. New Features

The following features were introduced into Faraday Update 2 software release.

- [Section 3.2.1, "G5 Cell Interface Chain Extension"](#)
- [Section 3.2.2, "G5 Cell Interface Chain Length Detection"](#)
- [Section 3.2.3, "Configurable Temperature Group"](#)
- [Section 3.2.4, "Imbalance Estimation Improvements"](#)
- [Section 3.2.5, "Enhanced Pre-Charge Algorithm"](#)
- [Section 3.2.6, "Improved Shorted Shunt Detector"](#)
- [Section 3.2.7, "Multicast DNS \(mDNS\)"](#)
- [Section 3.2.8, "Configurable Modbus Version"](#)
- [Section 3.2.9, "UVLO Mismatch Fault and Warning"](#)
- [Section 3.2.10, "Updated LED Behaviour"](#)

3.2.1. G5 Cell Interface Chain Extension

This release adds support for up to 32 G5 Cell Interfaces in a chain (up from a maximum of 20).

3.2.1.1. Configuration Updates

To use the G5 Stack Switchgear with more than 20 G5 Cell Interfaces the following configurations must be updated:

Table 2. Faraday Update 2 Configuration Updates

Register	Recommended setting when using more than 20 Cell Interfaces
stack_therm_fresh[0].period	24000000
stack_cell_fresh[0].period	5000000
sc_linkbus[0].cicount	Count of Cell Interfaces in chain
cell[*].installed	Set to correspond to installed cells, maximum of 768.
therm[*].installed	Set to correspond to installed thermistors, maximum of 256

3.2.1.2. Cell Voltage Scan Rate with Extended G5 Cell Interface Chain

The following table lists the average cell voltage scan rate at the maximum supported chain length.

Table 3. Cell Voltage Scan Rates for G5 Cell Interface

G5 Cell Interface Chain Length	Average Scan Rate [Hz]
32 (max)	0.92

3.2.2. G5 Cell Interface Chain Length Detection

This release provides the ability to detect the number of G5 Cell Interface connected to the G5 Stack Switchgear. This feature is useful during initial system bring-up to identify where in the chain of Cell Interfaces the G5 Stack Switchgear is able to communicate up to. Problems passing Self-Check due to a Linkbus connection issue can be diagnosed with this feature.

Chain length detection is automatically performed while the system is going through Self-Check to enter Operational Mode. In addition, auto chain length detection is performed in the event of any Linkbus scan errors and can be triggered manually by the operator.

3.2.2.1. Operator Interface

The Cell Interface chain length can be obtained through the Cell Interface Status accordion in the Details Tab of the Operator Interface. The Cell Interface Status accordion also contains other information about the configured and connected Cell Interfaces. This includes:

- Last Scan Time - The last time the Cell Interface chain was scanned for the number of connected Cell Interfaces
- Detected CI Count - The number of detected Cell Interfaces
- Configured CI Count - The number of configured Cell Interfaces
- CI Type - The type of Cell Interface detected

CI Status		Updated 4/25/2025, 2:30:46 PM
Start CI Scan		
Name	Value	
Last Scan Time	4/25/2025, 12:20:33 PM	
Detected CI Count	32	
Configured CI Count	32	
CI Type	CI24	

Figure 1. Cell Interface Status Accordion in Details Tab

This information is updated during the following conditions:

- Self-Check
- A change in the Cell Interface chain configuration
- After an error to communicate with the Cell Interface chain
- Clicking the Start CI Scan button in this accordion

3.2.3. Configurable Temperature Group

Configurable temperature group is a new feature in Faraday Update 2 that allows thermistors connected to the G5 Cell Interface to be used to measure temperatures that are not battery cell temperature. This allows the G5 Stack Switchgear to be used to measure auxiliary temperature measurements such as enclosure temperatures, bus bar temperatures, etc.

In addition to the existing battery cell temperatures, 3 auxiliary temperature groups can be defined, each providing their own temperature statistics and operating limits such as low and high temperature warnings and faults.



The auxiliary temperature groups do not provide separate charge and discharge trigger thresholds. The temperature trigger points apply regardless of charging or discharging.

3.2.3.1. Configuration Updates

A new component `therms_group_manager` was added to provide the ability to assign each thermistor a group by writing into its `group_id` register. Each instance of this component maps 1 to 1 with the thermistor instance, providing the ability to assign any thermistor to one of 4 thermistor group.

The thermistor group and their ids are listed below.

Table 4. Thermistor Group Identifiers

Group Id	Description
0	Cell Temperature Group (existing temperature group)
1	Auxiliary Temperature Group 1

Group Id	Description
2	Auxiliary Temperature Group 2
3	Auxiliary Temperature Group 3

An example configuration is shown below where the existing Cell Temperature and 3 Auxiliary Temperature groups are configured.



These examples are to illustrate how the thermistor groups can be used. It does not represent how thermistors should be or need to be wired for end applications.

Table 5. Auxiliary Thermistor Group Management Configuration

Register	Register Value	Description
therms_group_manager[0:7].group_id	0	Cell Thermistors on CI #1
therms_group_manager[8:9].group_id	1	Connector Thermistors on CI #1
therms_group_manager[10:15].group_id	0	Cell Thermistor on CI #2
therms_group_manager[16:17].group_id	1	Connector Thermistors on CI #2
therms_group_manager[18:23].group_id	0	Cell Thermistors on CI #3
therms_group_manager[24:25].group_id	2	Bus Bar Thermistors on CI #3
therms_group_manager[26:31].group_id	0	Cell Thermistor on CI #4
therms_group_manager[32:33].group_id	2	Bus Bar Thermistors on CI #4
therms_group_manager[34:39].group_id	0	Cell Thermistors on CI #5
therms_group_manager[40:41].group_id	3	Fuse Thermistors on CI #5
therms_group_manager[42:47].group_id	0	Cell Thermistors on CI #6
therms_group_manager[48:49].group_id	3	Fuse Thermistors on CI #7
therms_group_manager[50:55].group_id	0	Cell Thermistors on CI #7
therms_group_manager[56:79].group_id	0	Cell Thermistors on CI #8
therms_group_manager[80:103].group_id	0	Cell Thermistors on CI #9
therms_group_manager[104:127].group_id	0	Cell Thermistors on CI #10

Each thermistor group can be provided with a user friendly name.

Table 6. Auxiliary Thermistor Group Name

Register	Register Value
stack_thermistors_group.group_name_0	"Cell The"
stack_thermistors_group.group_name_1	"rmistors"
stack_thermistors_group.group_name_2	""
stack_thermistors_group.group_name_3	""
stack_aux_therm_group_1.group_name_0	"Connecto"
stack_aux_therm_group_1.group_name_1	"r Thermi"

Register	Register Value
stack_aux_therm_group_1.group_name_2	"stors"
stack_aux_therm_group_1.group_name_3	""
stack_aux_therm_group_2.group_name_0	"Busbar T"
stack_aux_therm_group_2.group_name_1	"hermisto"
stack_aux_therm_group_2.group_name_2	"rs"
stack_aux_therm_group_2.group_name_3	""
stack_aux_therm_group_3.group_name_0	"Fuse The"
stack_aux_therm_group_3.group_name_1	"rmistors"
stack_aux_therm_group_3.group_name_2	""
stack_aux_therm_group_3.group_name_3	""

The Operator Interface reflects these configurations, showing thermistors grouped as per the `therms_group_manager` settings, as illustrated in [Figure 2, "Cell Temperature Details"](#), [Figure 3, "Thermistor Temperature Group 1 Details"](#), [Figure 4, "Thermistor Temperature Group 2 Details"](#) and [Figure 5, "Thermistor Temperature Group 3 Details"](#).

Temperatures

Updated 12/11/2024, 5:21:39 PM

Groups: **Cell Thermistors** Connector Thermistors Busbar Thermistors Fuse Thermistors

Filter: **Off** Above Below

	Index 1	Index 2	Index 3	Index 4	Index 5	Index 6	Index 7	Index 8
CI 1	26 °C	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C
CI 2	-	-	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C
CI 3	-	-	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C
CI 4	-	-	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C
CI 5	-	-	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C
CI 6	-	-	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C
CI 7	-	-	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C
CI 8	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C
CI 9	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C
CI 10	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C
CI 11	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C	25 °C

Figure 2. Cell Temperature Details

Temperatures

Updated 12/11/2024, 5:21:47 PM

Groups: Cell Thermistors **Connector Thermistors** Busbar Thermistors Fuse Thermistors

Filter: **Off** Above Below

	Index 1	Index 2	Index 3	Index 4	Index 5	Index 6	Index 7	Index 8
CI 2	25 °C	25 °C	-	-	-	-	-	-
CI 3	25 °C	25 °C	-	-	-	-	-	-

Figure 3. Thermistor Temperature Group 1 Details

Temperatures

Updated 12/11/2024, 5:21:50 PM

Groups: Cell Thermistors Connector Thermistors **Busbar Thermistors** Fuse Thermistors

Filter: **Off** Above Below

	Index 1	Index 2	Index 3	Index 4	Index 5	Index 6	Index 7	Index 8
CI 4	25 °C	25 °C	-	-	-	-	-	-
CI 5	25 °C	25 °C	-	-	-	-	-	-

Figure 4. Thermistor Temperature Group 2 Details



Figure 5. Thermistor Temperature Group 3 Details

The existing cell temperature group triggers (warnings and faults) remain unchanged. However, additional warnings and faults are added for each auxiliary temperature group.

Table 7. Auxiliary Thermistor Group Triggers

Trigger Name	Trigger Description
stack_fault_aux_therm_group_<x>_over	Functional safety threshold for over temperature fault detection
stack_fault_aux_therm_group_<x>_hi	High temperature fault detection
stack_warn_aux_therm_group_<x>_hi	High temperature warning
stack_warn_aux_therm_group_<x>_lo	Low temperature warning
stack_fault_aux_therm_group_<x>_lo	Low temperature fault detection
stack_fault_aux_therm_group_<x>_under	Functional safety threshold for under temperature fault detection



Replace <x> with the auxiliary temperature group ids (1, 2, or 3). For example stack_fault_aux_therm_group_1_under.

Continuing from the example above, Auxiliary Temperature Group 1 (ie. Connector Temperature) could have the following configurations.

Table 8. Auxiliary Thermistor Group Trigger Configuration

Register	Register Value
stack_fault_aux_therm_group_1_over.thresh	60
stack_fault_aux_therm_group_1_hi.thresh	50
stack_warn_aux_therm_group_1_hi.thresh	40
stack_warn_aux_therm_group_1_lo.thresh	30
stack_fault_aux_therm_group_1_lo.thresh	20
stack_fault_aux_therm_group_1_under.thresh	10

3.2.4. Imbalance Estimation Improvements

The imbalance estimator previously defined an upper and lower estimation window which would constrain imbalance estimation to happen below the lower threshold or above the upper threshold. This was limiting by not allowing imbalance estimates to be preformed in the middle of a battery's OCV region.

With Faraday Update 2, only one estimation window is provided but with the ability to specify both

the upper and lower bounds of this window. This allows better flexibility for the system integrator to decide when imbalance estimates should be evaluated.

In addition, the following features were added to improve the usability of imbalance estimation:

- Allow resetting of the current imbalance estimates
- Control of when imbalance estimates are performed, in addition to the existing window thresholds
- Time hysteresis on when imbalance estimation can occur once the stack current is within the estimation_current_window

3.2.4.1. Registers

The following tables summarize the new registers added with the latest imbalance estimation improvements.

Table 9. Imbalance Estimation Configurations

Register	Description
stack_imbalance_estimator.soc_estimation_window_lower	Lower threshold configuration for the State-of-Charge estimation window
stack_imbalance_estimator.soc_estimation_window_upper	Upper threshold configuration for the State-of-Charge estimation window
stack_imbalance_estimator.voltage_estimation_window_lower	Lower threshold configuration for the voltage estimation window
stack_imbalance_estimator.voltage_estimation_window_upper	Upper threshold configuration for the voltage estimation window

Table 10. Imbalance Estimation Reset

Register	Description
stack_imbalance_estimator.reset_imbalances	Write 1 to this value to reset the current imbalance estimates to 0

As a note, imbalance estimates can be viewed in the Operator Interface in the Details Tab under the Estimated Imbalances accordion.

Estimated Imbalances

Updated 6/23/2025, 2:59:57 PM

Filter:

Off

Above

Below

	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	Cell 7	Cell 8	Cell 9	Cell 10	Cell 11	Cell 12	Cell 13	Cell 14	Cell 15	Cell 16
CI 1	4.17 Ah	2.93 Ah	1.99 Ah	4.61 Ah	2.23 Ah	1.77 Ah	3.40 Ah	3.81 Ah	1.45 Ah	1.39 Ah	2.89 Ah	3.24 Ah	3.55 Ah	3.05 Ah	1.69 Ah	4.91 Ah
CI 2	4.08 Ah	4.54 Ah	0.637 Ah	3.03 Ah	0.403 Ah	4.24 Ah	3.92 Ah	4.92 Ah	0.114 Ah	1.65 Ah	2.23 Ah	2.04 Ah	1.26 Ah	0.158 Ah	2.58 Ah	4.16 Ah
CI 3	2.34 Ah	3.60 Ah	2.84 Ah	2.83 Ah	4.62 Ah	1.46 Ah	1.53 Ah	2.14 Ah	4.10 Ah	1.00 Ah	2.05 Ah	0.335 Ah	0.545 Ah	2.58 Ah	4.04 Ah	2.26 Ah
CI 4	3.17 Ah	0.896 Ah	2.58 Ah	1.07 Ah	2.94 Ah	0.263 Ah	3.39 Ah	2.10 Ah	0.873 Ah	0.233 Ah	1.22 Ah	0.579 Ah	0.482 Ah	1.39 Ah	1.56 Ah	3.78 Ah
CI 5	4.11 Ah	0.865 Ah	4.10 Ah	3.27 Ah	0.574 Ah	0.427 Ah	4.86 Ah	4.51 Ah	3.16 Ah	3.19 Ah	0.954 Ah	3.59 Ah	3.54 Ah	0.873 Ah	0.167 Ah	3.13 Ah

Figure 6. Imbalance Estimates Accordion in Details Tab

3.2.5. Enhanced Pre-Charge Algorithm

The existing pre-charge algorithm monitors the pre-charge current for a configurable length of time, completing when the observed current has reduced under the pre-charge limit. This algorithm placed certain limitations on the conditions of completing pre-charge:

- Pre-charge timeout could only be configured up to 10 seconds to limit the amount of power going through the pre-charge resistor
- Pre-charge timeout was fixed, requiring the timeout duration to elapse before finishing pre-charge, regardless if the voltage difference between the battery stack and DC bus was low enough to connect

With the improved pre-charge algorithm, the G5 Stack Switchgear automatically monitors the power going through the pre-charge resistor, and could allow pre-charge to continue as long as is desired, as long as the maximum ratings of the pre-charge resistor are not exceeded. This allows for greater flexible in the end application for integrating with systems that may have different battery stack resistances, PCS capacitance, etc. In addition, pre-charge will finish as soon as the voltage between the battery stack and DC bus are within the specified value, reducing the time it takes for the system to connect.

3.2.5.1. Configuration Updates

The existing `stack_control.voltage_mismatch_thresh` is the primary configuration for determining when pre-charge is successful before the main contactor is closed.

The `stack_fault_precharge_timeout` fault can be configured to set a limit on how long pre-charge should take, but is not a required. Disabling the fault allows the pre-charge process to be indefinite as long as it is within the operating limits of the pre-charge resistor.

Table 11. Pre-Charge Configuration Updates

Register	Register Value	Description
<code>stack_control.voltage_mismatch_thresh</code>	25000	Voltage threshold below which pre-charge can terminate. Should not exceed 25000
<code>stack_fault_precharge_timeout.thresh</code>	User defined	Maximum time to attempt pre-charge before raising a fault and opening contactors to stop pre-charge
<code>stack_fault_precharge_timeout.disable</code>	0 or 1	Set to 0 to disable pre-charge timeout
<code>stack_warn_precharge_timeout.thresh</code>	User defined	Maximum time to attempt pre-charge before raising a warning.
<code>stack_warn_precharge_timeout.disabled</code>	0 or 1	Set to 0 to disable pre-charge warning

In addition, pre-charge resistor monitoring configurations were added to ensure the Stack Switchgear does not operate beyond it's specifications.

Table 12. Pre-Charge Resistor Monitoring Configuration Updates

Register	Register Value	Description A warning will not stop pre-charge or open contactors.
ssg_fault_precharge_over_1s_power.thresh	7500	Average power over 1 second, above which pre-charge will be aborted
ssg_fault_precharge_over_5s_power.thresh	3000	Average power over 5 seconds, above which pre-charge will be aborted
ssg_fault_precharge_over_10s_power.thresh	1500	Average power over 10 seconds, above which pre-charge will be aborted
ssg_fault_precharge_continuous_power.thresh	210	Average continuous power over the duration of pre-charge, above which pre-charge will be aborted



Pre-Charge resistor monitoring configurations should not be changed as they are specific to the design of the Stack Switchgear

3.2.6. Improved Shorted Shunt Detector

Improvements to the shorted shunt detector was made to increase the range of battery current that the detector can use for short shunt detection. This change allows for lower battery currents to be used with the G5 Stack Switchgear while meeting functional safety specifications.

The following minimum detection currents are now supported by the short shunt detector.

Table 13. New Minimum Detection Currents for Short Shunt Detector

Fuse Rating (A)	Minimum Detection Current (A)
350	100
400	100
500	100

3.2.7. Multicast DNS (mDNS)

Multicast DNS (mDNS) support was added to allow resolving the IP address of the G5 Stack Switchgear through its hostname.

The G5 Stack Switchgear can be reached at the following hostname:

nuvssg-<ssg_serial_number>.local

For example, a G5 Stack Switchgear with serial number 12345678900 can be reached using the hostname nuvssg-12345678900 instead of its IP address.

```
$ ping nuvssg-12345678900.local
```

```
PING nuvsbg-12345678900.local (192.168.1.22) 56(84) bytes of data.
64 bytes from 192.168.1.22 (192.168.1.22): icmp_seq=1 ttl=128 time=0.131 ms
64 bytes from 192.168.1.22 (192.168.1.22): icmp_seq=2 ttl=128 time=0.250 ms
```

3.2.8. Configurable Modbus Version

Faraday Update 2 introduces breaking changes to the existing Configurable Modbus to support the increased Cell Interface chain length. The number of registers that can be addressed within each bulk map has been increased from 480 to 1000 to accommodate the increased in number of potential cell measurements. In order to ensure existing system compatibility is retained, the version of the Configurable Modbus can be configured by writing to the `ssg_configurable_modbus_active_version.version` register to one of the following version number.

Table 14. Configurable Modbus Version Bulk Map Support

Version Number	Number of Registers Per Bulk Map
1	480
2	1000

3.2.9. UVLO Mismatch Fault and Warning

The G5 Stack Switchgear contains a front panel dip switch to control whether the system will enter Under Voltage Lockout mode, shutting down the G5 Stack Switchgear, when the battery voltage drops below a configured threshold. If the front panel UVLO is enabled through the dip switch but not configured in software (or vice versa), a new fault and warning was added to indicate this mismatch. This protects against the system not being able to enter UVLO shutdown because the front panel dip switch was not set correctly.

The following triggers were added:

- `ssg_fault_uvlo_mismatch`
- `ssg_warn_uvlo_mismatch`

However, due to a known issue with this feature, it is only recommended for cases where UVLO is enabled. See [Section 3.4.5, "UVLO Mismatch Fault Is Tripped During Bootup When UVLO is Disabled"](#) for more information.

3.2.10. Updated LED Behaviour

Faraday Update 2 introduces changes to the front panel LED behavior of the product to provide better clarity on the status of the G5 Stack Switchgear.

Table 15. Power LED Behaviour

State	Description
Off	Power is not available

State	Description
On	Power is available and within expected range
Blinking	Power is available but outside of expected range

Table 16. Fault LED

State	Description
Off	No BMS fault tripped
On	BMS fault tripped
Blinking	Bootloader Operation is in progress

Table 17. Activity LED (Green)

State	Description
Off	BMS is in Service Lockout
On	BMS is Operational
Blinking	BMS is in Self-Test

Table 18. Linkbus LED (Yellow)

State	Description
Off	No Linkbus activity
On	Linkbus communication successful
Blinking	Linkbus communication is abnormal

The G5 Stack Switchgear will blink it's Fault LED while the system is booting into the bootloader. The bootloader handles operations like firmware upgrade and factory restore. While the Fault LED is blinking the other LEDs are repurposed to indicate the state of the bootloader operation.

Table 19. Bootloader LED States

Fault LED	Activity LED (Green)	Linkbus LED (Yellow)	Description
Blinking	Off	Off	Bootloader is running and can not boot application, contact support@nuvationenergy.com
	Blinking	Blinking	Firmware upgrade is in progress
	Off	Blinking	Network reset in progress
	Blinking	Off	Factory restore in progress

3.3. Resolved Issues

- HTTP Stability improvements
- Fixed issue with the cell imbalance estimates not being bounded by the following configurations when only voltage based balancing is enabled:
 - `stack_imbalance_estimator.maximum_top_imbalance`
 - `stack_imbalance_estimator.maximum_bottom_imbalance`
- G5 Cell Interface Manufacturing data can be read back even when the system is in Factory Lockdown
- Fixed issue with initialized bitfields not representing trigger aggregate initialized fields
- Fixed issue where the G5 Stack Switchgear sometimes does not power on when UVLO is enabled

3.4. Known Issues

The following issues are known in the Faraday Update 2 firmware release.

3.4.1. G5 Stack Switchgear Board Model and Variant ID May Read 0

The G5 Stack Switchgear board and model variant IDs read from `ssg_board_info.model_id` and `ssg_board_info.variant_id` may provide an invalid ID of 0.

Workaround

The analog voltage `ssg_adc.variant_id` and `ssg_adc.model_id` can be provided to support@nuvationenergy.com to identify the model and variant id.

3.4.2. G5 Cell Interface (24 channel) May Not Detect Open Wire on Lowest Odd Cell Group

The G5 Cell Interface (24 channel) consists of 2, 12-channel cell groups: cells 1 - 12, and cells 13 - 24.

If an odd number of cells is installed on the lower cell group (ie. cells 1 - 12), an open wire on the last populated cell in this cell group may not be detected.

Workaround

Move the last cell in the lower cell group to the first cell in the upper cell group.

For example, for a Cell Interface with 22 cells installed, the typical installation would have cells 1 - 11 and cells 13 - 23 installed. Instead, the Cell Interface should be installed with cells 1 - 10 installed and cells 13 - 24 installed.

This would translate to a configuration file with the following configurations:

```
cell[0:9].installed = 1  
cell[12:23].installed = 1
```

3.4.3. Cell Voltage Balancer is Balancing When All Balancing is Disabled

When both modes of cell balancing have been configured to be disabled with the configuration:

```
stack_balancing_selector[0].enable_soc_balancer = 0  
stack_balancing_selector[0].enable_voltage_balancer = 0
```

If the cell voltages measured are within the range defined by the voltage based cell balancer, the firmware will balance the cells within that range. This behavior does not apply to the SOC based balancer. Cell SOC imbalance estimates may be generated while the SOC balancer is disabled and are never applied for balancing.

Workaround

When disabling both modes of balancing, configure the minimum enable voltage for the cell voltage balancer to 5 volts which is the maximum cell voltage reading for the Nuvation Energy BMS.

```
stack_cell_voltage_balancer[0].min_enable_voltage = 5000
```

3.4.4. Enabling Backup Warning Faults Causes Self-Check To Fail

The following warnings may fail to initialize, causing Self-Check to fail, if they were previously disabled and were enabled:

- `sc_warn_factory_backup_error`
- `sc_warn_bms_backup_error`
- `sc_warn_network_backup_error`

Workaround

Restart the BMS before attempting to exit Service Lockout again. Subsequently requests to exit Service Lockout will not get stuck in Self-Check again. This behaviour is limited only to the first time the fault was enabled.

3.4.5. UVLO Mismatch Fault Is Tripped During Bootup When UVLO is Disabled

The UVLO mismatch fault and warnings (`ssg_warn_uvlo_mismatch` and `ssg_fault_uvlo_mismatch`) are incorrectly tripped when exiting Service Lockout.

This occurs only when UVLO is disabled on both the Stack Switchgear front panel dip switches and disabled in configuration.

Workaround

The faults and warnings can be disabled. Alternatively, the fault can be cleared every time after completing Self-Check.

3.5. Register Changes

This section lists the register changes introduced in Faraday Update 2 from Faraday Update 1.

3.5.1. Added Components

cell_c1_stats

Name	cell_c1_stats
Description	Statistics
Base Address	316960
Instance Count	1

Name	Description	Storage Type	Type	Units
avg	Average value	Volatile	Farads	F
max	Maximum value	Volatile	Farads	F
maxindex	Maximum value index	Volatile	Count	Number
min	Minimum value	Volatile	Farads	F
minindex	Minimum value index	Volatile	Count	Number
update	Write true to this to update the statistics, this is written internally on each update	Volatile	Boolean	Flag

cell_r1_stats

Name	cell_r1_stats
Description	Statistics
Base Address	316944
Instance Count	1

Name	Description	Storage Type	Type	Units
avg	Average value	Volatile	MicroOhms	uOhm
max	Maximum value	Volatile	MicroOhms	uOhm
maxindex	Maximum value index	Volatile	Count	Number
min	Minimum value	Volatile	MicroOhms	uOhm
minindex	Minimum value index	Volatile	Count	Number
update	Write true to this to update the statistics, this is written internally on each update	Volatile	Boolean	Flag

cell_resistance_stats

Name	cell_resistance_stats
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Description	Statistics
Base Address	316928
Instance Count	1

Name	Description	Storage Type	Type	Units
avg	Average value	Volatile	MicroOhms	uOhm
max	Maximum value	Volatile	MicroOhms	uOhm
maxindex	Maximum value index	Volatile	Count	Number
min	Minimum value	Volatile	MicroOhms	uOhm
minindex	Minimum value index	Volatile	Count	Number
update	Write true to this to update the statistics, this is written internally on each update	Volatile	Boolean	Flag

sc_bl_upgrader_fw_image

Name	sc_bl_upgrader_fw_image
Description	Build Information
Base Address	316592
Instance Count	1

Name	Description	Storage Type	Type	Units
build_crc	Build CRC16	Manufacturing	UInt16	Value
build_id	Build ID	Manufacturing	String	ASCII
build_time	Time at which the FW was built	Manufacturing	String	ASCII
build_type	Build type of the FW	Manufacturing	String	ASCII
build_user	User who built the binary	Manufacturing	String	ASCII
build_version	Build version	Manufacturing	String	ASCII
revision_id	Processor revision	Manufacturing	UInt64	Value

sc_ci_auth_fresh

Name	sc_ci_auth_fresh
Description	Freshness
Base Address	315808
Instance Count	1

Name	Description	Storage Type	Type	Units
last_update_time	Time the data was last updated	Volatile	Microseconds	uS
max_update_period	Max time period between updates to the monitored data	Volatile	Microseconds	uS

Name	Description	Storage Type	Type	Units
period	Time period within which the data needs to be updated before it is stale	Factory	Microseconds	uS
refreshed	This register is updated internally when all associated data has been refreshed	Volatile	Boolean	Flag
stale	1 indicates the associated data has not been updated within the configured time. 0 indicates the data is still fresh	Volatile	Boolean	Flag
update	Writing to this register triggers an evaluation of the freshness	Volatile	Boolean	Flag

sc_factory_restore_count

Name	sc_factory_restore_count
Description	Restore Counts
Base Address	316912
Instance Count	1

Name	Description	Storage Type	Type	Units
failure_count	How many times factory restore failed	Volatile	Count	Number
success_count	How many times the software has been factory restored	Volatile	Count	Number

sc_first_stage_bl_fw_image

Name	sc_first_stage_bl_fw_image
Description	Build Information
Base Address	156656
Instance Count	1

Name	Description	Storage Type	Type	Units
build_crc	Build CRC16	Manufacturing	UInt16	Value
build_id	Build ID	Manufacturing	String	ASCII
build_time	Time at which the FW was built	Manufacturing	String	ASCII
build_type	Build type of the FW	Manufacturing	String	ASCII
build_user	User who built the binary	Manufacturing	String	ASCII
build_version	Build version	Manufacturing	String	ASCII
revision_id	Processor revision	Manufacturing	UInt64	Value

sc_linkbus_actual_scan_period_fresh

Name	sc_linkbus_actual_scan_period_fresh
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Description	Freshness
Base Address	316448
Instance Count	1

Name	Description	Storage Type	Type	Units
last_update_time	Time the data was last updated	Volatile	Microseconds	uS
max_update_period	Max time period between updates to the monitored data	Volatile	Microseconds	uS
period	Time period within which the data needs to be updated before it is stale	Factory	Microseconds	uS
refreshed	This register is updated internally when all associated data has been refreshed	Volatile	Boolean	Flag
stale	1 indicates the associated data has not been updated within the configured time. 0 indicates the data is still fresh	Volatile	Boolean	Flag
update	Writing to this register triggers an evaluation of the freshness	Volatile	Boolean	Flag

sc_second_stage_bl_fw_image

Name	sc_second_stage_bl_fw_image
Description	Build Information
Base Address	316576
Instance Count	1

Name	Description	Storage Type	Type	Units
build_crc	Build CRC16	Manufacturing	UInt16	Value
build_id	Build ID	Manufacturing	String	ASCII
build_time	Time at which the FW was built	Manufacturing	String	ASCII
build_type	Build type of the FW	Manufacturing	String	ASCII
build_user	User who built the binary	Manufacturing	String	ASCII
build_version	Build version	Manufacturing	String	ASCII
revision_id	Processor revision	Manufacturing	UInt64	Value

sc_tracex_processing_stat

Name	sc_tracex_processing_stat
Description	Timing Statistics
Base Address	315840
Instance Count	1

Name	Description	Storage Type	Type	Units
avgtime	Average round-trip time	Volatile	Microseconds	uS
diff	Latest time difference to update the statistics	Volatile	Microseconds	uS
maxtime	Maximum round-trip time	Volatile	Microseconds	uS
mintime	Minimum round-trip time	Volatile	Microseconds	uS
msgcount	Total number of messages	Volatile	UInt64	Value
reset	Writing to this resets the statistics	Volatile	Boolean	Flag

sc_warn_ci_mfg_info_read

Name	sc_warn_ci_mfg_info_read
Description	Standalone Trigger
Base Address	25552
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
error	True when the trigger should trip, otherwise false	Volatile	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

ssg_afe_afe_update_watchdog_edge_counter

Name	ssg_afe_afe_update_watchdog_edge_counter
Description	Edge Counter
Base Address	316800
Instance Count	1

Name	Description	Storage Type	Type	Units
falling_edge_count	Indicates how many times a falling edge was observed	Volatile	Count	Number
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
reset	Writing any value to this register resets the counters	Volatile	Boolean	Flag
rising_edge_count	Indicates how many times a rising edge was observed	Volatile	Count	Number

ssg_afe_cpu_bist_update_watchdog_edge_counter

Name	ssg_afe_cpu_bist_update_watchdog_edge_counter
Description	Edge Counter
Base Address	316752
Instance Count	1

Name	Description	Storage Type	Type	Units
falling_edge_count	Indicates how many times a falling edge was observed	Volatile	Count	Number
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
reset	Writing any value to this register resets the counters	Volatile	Boolean	Flag
rising_edge_count	Indicates how many times a rising edge was observed	Volatile	Count	Number

ssg_afe_ram_bist_update_watchdog_edge_counter

Name	ssg_afe_ram_bist_update_watchdog_edge_counter
Description	Edge Counter
Base Address	316768
Instance Count	1

Name	Description	Storage Type	Type	Units
falling_edge_count	Indicates how many times a falling edge was observed	Volatile	Count	Number
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
reset	Writing any value to this register resets the counters	Volatile	Boolean	Flag
rising_edge_count	Indicates how many times a rising edge was observed	Volatile	Count	Number

ssg_afe_rom_bist_update_watchdog_edge_counter

Name	ssg_afe_rom_bist_update_watchdog_edge_counter
Description	Edge Counter
Base Address	316784
Instance Count	1

Name	Description	Storage Type	Type	Units
falling_edge_count	Indicates how many times a falling edge was observed	Volatile	Count	Number
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
reset	Writing any value to this register resets the counters	Volatile	Boolean	Flag
rising_edge_count	Indicates how many times a rising edge was observed	Volatile	Count	Number

ssg_afe_temperature_update_watchdog_edge_counter

Name	ssg_afe_temperature_update_watchdog_edge_counter
Description	Edge Counter
Base Address	316816
Instance Count	1

Name	Description	Storage Type	Type	Units
falling_edge_count	Indicates how many times a falling edge was observed	Volatile	Count	Number
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
reset	Writing any value to this register resets the counters	Volatile	Boolean	Flag
rising_edge_count	Indicates how many times a rising edge was observed	Volatile	Count	Number

ssg_afe_thermistor_bist_update_watchdog_edge_counter

Name	ssg_afe_thermistor_bist_update_watchdog_edge_counter
Description	Edge Counter
Base Address	316736
Instance Count	1

Name	Description	Storage Type	Type	Units
falling_edge_count	Indicates how many times a falling edge was observed	Volatile	Count	Number
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
reset	Writing any value to this register resets the counters	Volatile	Boolean	Flag
rising_edge_count	Indicates how many times a rising edge was observed	Volatile	Count	Number

ssg_ambient_therm_average

Name	ssg_ambient_therm_average
Description	Weighted Average
Base Address	320832
Instance Count	1

Name	Description	Storage Type	Type	Units
alpha	Weight for the new measurement	Factory	Float	Value
initialized	True if at least one value has been written to the filter	Volatile	Boolean	Flag
output	Output from the filter	Volatile	Float	Value

ssg_authentication_component

Name	ssg_authentication_component
Description	Authentication Component
Base Address	316608
Instance Count	1

Name	Description	Storage Type	Type	Units
auth_level	Authentication level	Volatile	Int8	Value
authentication_timeout	Period after which authentication expires (microseconds)	Configuration	Microseconds	uS
last_failed_attempt	Time of last failed authentication attempt (seconds)	Volatile	UInt64	Value

ssg_ci_auth_key_hash

Name	ssg_ci_auth_key_hash
Description	SHA256 Hash Information
Base Address	316512
Instance Count	1

Name	Description	Storage Type	Type	Units
hash0	First group of 8 hex string digits SHA-256 hash	Volatile	String	ASCII
hash1	Second group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII
hash2	Third group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII
hash3	Fourth group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII

Name	Description	Storage Type	Type	Units
hash4	Fifth group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII
hash5	Sixth group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII
hash6	Seventh group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII
hash7	Eighth group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII

ssg_configurable_modbus_active_version

Name	ssg_configurable_modbus_active_version
Description	Modbus Model Version
Base Address	326592
Instance Count	1

Name	Description	Storage Type	Type	Units
version	Current Modbus Model version being served	Configuration	UInt32	Value

ssg_configurable_modbus_available_versions

Name	ssg_configurable_modbus_available_versions
Description	Available Versions Of The SSG Modbus Model
Base Address	326576
Instance Count	2

Name	Description	Storage Type	Type	Units
version	Version of the SSG modbus model which is available for use	Volatile	UInt32	Value

ssg_factory_restore_img

Name	ssg_factory_restore_img
Description	Flash Partition Parameters
Base Address	316832
Instance Count	1

Name	Description	Storage Type	Type	Units
verification_error	Whether an error has occurred during verification	Volatile	Boolean	Flag

ssg_fault_gpi_0

Name	ssg_fault_gpi_0
Description	Hysteresis Trigger
Base Address	315680
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Boolean	Flag
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Boolean	Flag

ssg_fault_gpi_1

Name	ssg_fault_gpi_1
Description	Hysteresis Trigger
Base Address	321056
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag

Name	Description	Storage Type	Type	Units
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Boolean	Flag
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Boolean	Flag

ssg_fault_monotonic_clock_wdt

Name	ssg_fault_monotonic_clock_wdt
Description	Boolean Trigger
Base Address	326416
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

ssg_fault_precharge_continuous_power

Name	ssg_fault_precharge_continuous_power
Description	Hysteresis Trigger
Base Address	315936
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Factory	Microseconds	uS

Name	Description	Storage Type	Type	Units
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Factory	Boolean	Flag
thresh	Trigger threshold	Factory	PowerW	W
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Factory	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	PowerW	W

ssg_fault_precharge_internal

Name	ssg_fault_precharge_internal
Description	Boolean Trigger
Base Address	316000
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

ssg_fault_precharge_over_10s_power

Name	ssg_fault_precharge_over_10s_power
Description	Hysteresis Trigger
Base Address	315920
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Factory	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Factory	Boolean	Flag
thresh	Trigger threshold	Factory	PowerW	W
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Factory	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	PowerW	W

ssg_fault_precharge_over_1s_power

Name	ssg_fault_precharge_over_1s_power
Description	Hysteresis Trigger
Base Address	315888
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Factory	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Factory	Boolean	Flag
thresh	Trigger threshold	Factory	PowerW	W
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

Name	Description	Storage Type	Type	Units
time_hyst	Trigger time hysteresis	Factory	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	PowerW	W

ssg_fault_precharge_over_5s_power

Name	ssg_fault_precharge_over_5s_power
Description	Hysteresis Trigger
Base Address	315904
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Factory	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Factory	Boolean	Flag
thresh	Trigger threshold	Factory	PowerW	W
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Factory	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	PowerW	W

ssg_fault_rtc_clock_wdt

Name	ssg_fault_rtc_clock_wdt
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Description	Boolean Trigger
Base Address	326448
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

ssg_fault_temperature_short_shunt_fresh_wdt

Name	ssg_fault_temperature_short_shunt_fresh_wdt
Description	Boolean Trigger
Base Address	316048
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

ssg_fault_uvlo_mismatch

Name	ssg_fault_uvlo_mismatch
Description	Boolean Trigger
Base Address	316880
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag

Name	Description	Storage Type	Type	Units
trig	Trigger state	Volatile	Boolean	Flag

ssg_first_stage_boot_info

Name	ssg_first_stage_boot_info
Description	Boot Info Status Component
Base Address	316640
Instance Count	1

Name	Description	Storage Type	Type	Units
boot_attempt_count	Boot attempt count	Volatile	Count	Number
boot_failure_count	Boot failure count	Volatile	Count	Number
boot_state	Boot state	Volatile	UInt32	Value
boot_success_count	Boot success count	Volatile	Count	Number

ssg_gpi_0_error_fault

Name	ssg_gpi_0_error_fault
Description	GPI Error
Base Address	315712
Instance Count	1

Name	Description	Storage Type	Type	Units
error	Intermediate register to facilitate hysteresis gpi trigger	Volatile	Boolean	Flag

ssg_gpi_0_error_warn

Name	ssg_gpi_0_error_warn
Description	GPI Error
Base Address	315696
Instance Count	1

Name	Description	Storage Type	Type	Units
error	Intermediate register to facilitate hysteresis gpi trigger	Volatile	Boolean	Flag

ssg_gpi_1_error_fault

Name	ssg_gpi_1_error_fault
Description	GPI Error

Base Address	321088
Instance Count	1

Name	Description	Storage Type	Type	Units
error	Intermediate register to facilitate hysteresis gpi trigger	Volatile	Boolean	Flag

ssg_gpi_1_error_warn

Name	ssg_gpi_1_error_warn
Description	GPI Error
Base Address	321072
Instance Count	1

Name	Description	Storage Type	Type	Units
error	Intermediate register to facilitate hysteresis gpi trigger	Volatile	Boolean	Flag

ssg_main_boot_info

Name	ssg_main_boot_info
Description	Boot Info Status Component
Base Address	316688
Instance Count	1

Name	Description	Storage Type	Type	Units
boot_attempt_count	Boot attempt count	Volatile	Count	Number
boot_failure_count	Boot failure count	Volatile	Count	Number
boot_state	Boot state	Volatile	UInt32	Value
boot_success_count	Boot success count	Volatile	Count	Number

ssg_monotonic_clock_fresh

Name	ssg_monotonic_clock_fresh
Description	Freshness With Persisted Clock
Base Address	326400
Instance Count	1

Name	Description	Storage Type	Type	Units
initialized	Indicates that the freshness component's clock source has been initialized	Volatile	Boolean	Flag
last_update_time	Time the data was last updated	Volatile	Microseconds	uS

Name	Description	Storage Type	Type	Units
max_update_period	Max time period between updates to the monitored data	Volatile	Microseconds	uS
period	Time period within which the data needs to be updated before it is stale	Factory	Microseconds	uS
refreshed	This register is updated internally when all associated data has been refreshed	Volatile	Boolean	Flag
stale	1 indicates the associated data has not been updated within the configured time. 0 indicates the data is still fresh	Volatile	Boolean	Flag
update	Writing to this register triggers an evaluation of the freshness	Volatile	Boolean	Flag

sbg_precharge_monitor

Name	sbg_precharge_monitor
Description	Monitors The Precharge Process
Base Address	315856
Instance Count	1

Name	Description	Storage Type	Type	Units
measured_10s_avg_power	Measured 10s average power in Watts	Volatile	PowerW	W
measured_1s_avg_power	Measured 1s average power in Watts	Volatile	PowerW	W
measured_5s_avg_power	Measured 5s average power in Watts	Volatile	PowerW	W
measured_continuous_power	Measured continuous power in Watts	Volatile	PowerW	W
measured_resistance	Measured precharge resistance in uOhm	Volatile	MicroOhms	uOhm
monitored_time	Time elapsed in precharge	Volatile	Microseconds	uS
nominal_resistance	Rated precharge resistance in MicroOhms	Factory	MicroOhms	uOhm
update_avg_queue_error	True if any of average power queues has an update error	Volatile	Boolean	Flag

sbg_rtc_clock_fresh

Name	sbg_rtc_clock_fresh
Description	Freshness
Base Address	326432
Instance Count	1

Name	Description	Storage Type	Type	Units
last_update_time	Time the data was last updated	Volatile	Microseconds	uS
max_update_period	Max time period between updates to the monitored data	Volatile	Microseconds	uS

Name	Description	Storage Type	Type	Units
period	Time period within which the data needs to be updated before it is stale	Factory	Microseconds	uS
refreshed	This register is updated internally when all associated data has been refreshed	Volatile	Boolean	Flag
stale	1 indicates the associated data has not been updated within the configured time. 0 indicates the data is still fresh	Volatile	Boolean	Flag
update	Writing to this register triggers an evaluation of the freshness	Volatile	Boolean	Flag

ssg_second_stage_boot_info

Name	ssg_second_stage_boot_info
Description	Boot Info Status Component
Base Address	316656
Instance Count	1

Name	Description	Storage Type	Type	Units
boot_attempt_count	Boot attempt count	Volatile	Count	Number
boot_failure_count	Boot failure count	Volatile	Count	Number
boot_state	Boot state	Volatile	UInt32	Value
boot_success_count	Boot success count	Volatile	Count	Number

ssg_short_therm_average

Name	ssg_short_therm_average
Description	Weighted Average
Base Address	320816
Instance Count	1

Name	Description	Storage Type	Type	Units
alpha	Weight for the new measurement	Factory	Float	Value
initialized	True if at least one value has been written to the filter	Volatile	Boolean	Flag
output	Output from the filter	Volatile	Float	Value

ssg_short_therm_selector

Name	ssg_short_therm_selector
Description	Thermistor Selector
Base Address	320880

Instance Count	1
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Name	Description	Storage Type	Type	Units
output	Value of chosen thermistor	Volatile	Float	Value
thermistor	Thermistor to be used as output.(0 = Fuse1 = Shunt2 = Battery Positive3 = Battery Negative4 = DC Bus Positive5 = DC Bus Negative)	Factory	UInt8	Value

ssg_shutdown_mode

Name	ssg_shutdown_mode
Description	SSG Shutdown Mode
Base Address	326464
Instance Count	1

Name	Description	Storage Type	Type	Units
value	0 = Software, 1 = Hardware	Volatile	Boolean	Flag

ssg_temperature_short_shunt_fresh

Name	ssg_temperature_short_shunt_fresh
Description	Freshness
Base Address	316032
Instance Count	1

Name	Description	Storage Type	Type	Units
last_update_time	Time the data was last updated	Volatile	Microseconds	uS
max_update_period	Max time period between updates to the monitored data	Volatile	Microseconds	uS
period	Time period within which the data needs to be updated before it is stale	Factory	Microseconds	uS
refreshed	This register is updated internally when all associated data has been refreshed	Volatile	Boolean	Flag
stale	1 indicates the associated data has not been updated within the configured time. 0 indicates the data is still fresh	Volatile	Boolean	Flag
update	Writing to this register triggers an evaluation of the freshness	Volatile	Boolean	Flag

ssg_therm_group_1_diff

Name	ssg_therm_group_1_diff
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Description	Maximum Difference Of Input Values
Base Address	326640
Instance Count	1

Name	Description	Storage Type	Type	Units
diff	Maximum difference between input values	Volatile	Temperature	C

ssg_therm_group_2_diff

Name	ssg_therm_group_2_diff
Description	Maximum Difference Of Input Values
Base Address	326656
Instance Count	1

Name	Description	Storage Type	Type	Units
diff	Maximum difference between input values	Volatile	Temperature	C

ssg_therm_group_3_diff

Name	ssg_therm_group_3_diff
Description	Maximum Difference Of Input Values
Base Address	326672
Instance Count	1

Name	Description	Storage Type	Type	Units
diff	Maximum difference between input values	Volatile	Temperature	C

ssg_upgrade_auth_key_hash

Name	ssg_upgrade_auth_key_hash
Description	SHA256 Hash Information
Base Address	316544
Instance Count	1

Name	Description	Storage Type	Type	Units
hash0	First group of 8 hex string digits SHA-256 hash	Volatile	String	ASCII
hash1	Second group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII
hash2	Third group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII

Name	Description	Storage Type	Type	Units
hash3	Fourth group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII
hash4	Fifth group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII
hash5	Sixth group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII
hash6	Seventh group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII
hash7	Eighth group of 8 hex string digits in SHA-256 hash	Volatile	String	ASCII

ssg_upgrader_boot_info

Name	ssg_upgrader_boot_info
Description	Boot Info Status Component
Base Address	316672
Instance Count	1

Name	Description	Storage Type	Type	Units
boot_attempt_count	Boot attempt count	Volatile	Count	Number
boot_failure_count	Boot failure count	Volatile	Count	Number
boot_state	Boot state	Volatile	UInt32	Value
boot_success_count	Boot success count	Volatile	Count	Number

ssg_uvlo_status

Name	ssg_uvlo_status
Description	UVLO Feature Status
Base Address	316864
Instance Count	1

Name	Description	Storage Type	Type	Units
mismatched	True if value of UVLO gpi does not match enabled register of UVLO faults	Volatile	Boolean	Flag

ssg_vendor_modbus_active_version

Name	ssg_vendor_modbus_active_version
Description	Modbus Model Version
Base Address	321024
Instance Count	1

Name	Description	Storage Type	Type	Units
version	Current Modbus Model version being served	Configuration	UInt32	Value

ssg_vendor_modbus_available_versions

Name	ssg_vendor_modbus_available_versions
Description	Available Versions Of The SSG Modbus Model
Base Address	320848
Instance Count	1

Name	Description	Storage Type	Type	Units
version	Version of the SSG modbus model which is available for use	Volatile	UInt32	Value

ssg_warn_24v_rail_voltage_combined

Name	ssg_warn_24v_rail_voltage_combined
Description	Trigger Aggregate
Base Address	316496
Instance Count	1

Name	Description	Storage Type	Type	Units
count	Number of tripped triggers	Volatile	Count	Number
initialized	True if aggregated faults have all been initialized	Volatile	Boolean	Flag
trig	True if a fault has triggered, otherwise false	Volatile	Boolean	Flag

ssg_warn_24v_rail_voltage_hi

Name	ssg_warn_24v_rail_voltage_hi
Description	Hysteresis Trigger
Base Address	316464
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Factory	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag

Name	Description	Storage Type	Type	Units
latched	True if the component should latch in the tripped state until manually cleared	Factory	Boolean	Flag
thresh	Trigger threshold	Factory	Voltage	mV
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Factory	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Voltage	mV

ssg_warn_24v_rail_voltage_lo

Name	ssg_warn_24v_rail_voltage_lo
Description	Hysteresis Trigger
Base Address	316480
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Factory	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Factory	Boolean	Flag
thresh	Trigger threshold	Factory	Voltage	mV
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Factory	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS

Name	Description	Storage Type	Type	Units
triggering_value	Value that caused the triggered state to change to true	Volatile	Voltage	mV

ssg_warn_factory_restore_img_corrupted

Name	ssg_warn_factory_restore_img_corrupted
Description	Boolean Trigger
Base Address	316848
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

ssg_warn_gpi_0

Name	ssg_warn_gpi_0
Description	Hysteresis Trigger
Base Address	315664
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Boolean	Flag
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS

Name	Description	Storage Type	Type	Units
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Boolean	Flag

ssg_warn_gpi_1

Name	ssg_warn_gpi_1
Description	Hysteresis Trigger
Base Address	321040
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Boolean	Flag
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Boolean	Flag

ssg_warn_uvlo_mismatch

Name	ssg_warn_uvlo_mismatch
Description	Boolean Trigger

Base Address	316896
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

stack_aux_therm_group_1

Name	stack_aux_therm_group_1
Description	Component Group
Base Address	320902
Instance Count	1

Name	Description	Storage Type	Type	Units
group_id	Group identifier	Volatile	UInt8	Value
group_name_0	Group name segment 0	Configuration	String	ASCII
group_name_1	Group name segment 1	Configuration	String	ASCII
group_name_2	Group name segment 2	Configuration	String	ASCII
group_name_3	Group name segment 3	Configuration	String	ASCII
group_size	Number of components in the group	Volatile	Count	Number

stack_aux_therm_group_1_stat

Name	stack_aux_therm_group_1_stat
Description	Statistics
Base Address	321104
Instance Count	1

Name	Description	Storage Type	Type	Units
avg	Average value	Volatile	Temperature	C
max	Maximum value	Volatile	Temperature	C
maxindex	Maximum value index	Volatile	Count	Number
min	Minimum value	Volatile	Temperature	C
minindex	Minimum value index	Volatile	Count	Number

Name	Description	Storage Type	Type	Units
update	Write true to this to update the statistics, this is written internally on each update	Volatile	Boolean	Flag

stack_aux_therm_group_1_summary

Name	stack_aux_therm_group_1_summary
Description	Thermistors Summary
Base Address	326480
Instance Count	1

Name	Description	Storage Type	Type	Units
circuit_failure	Will be 1 if any circuit has failed, otherwise 0	Volatile	Boolean	Flag
circuit_failure_count	Count of the thermistors with circuit failures. This will include both installed and uninstalled thermistors	Volatile	Count	Number

stack_aux_therm_group_2

Name	stack_aux_therm_group_2
Description	Component Group
Base Address	320908
Instance Count	1

Name	Description	Storage Type	Type	Units
group_id	Group identifier	Volatile	UInt8	Value
group_name_0	Group name segment 0	Configuration	String	ASCII
group_name_1	Group name segment 1	Configuration	String	ASCII
group_name_2	Group name segment 2	Configuration	String	ASCII
group_name_3	Group name segment 3	Configuration	String	ASCII
group_size	Number of components in the group	Volatile	Count	Number

stack_aux_therm_group_2_stat

Name	stack_aux_therm_group_2_stat
Description	Statistics
Base Address	321110
Instance Count	1

Name	Description	Storage Type	Type	Units
avg	Average value	Volatile	Temperature	C

Name	Description	Storage Type	Type	Units
max	Maximum value	Volatile	Temperature	C
maxindex	Maximum value index	Volatile	Count	Number
min	Minimum value	Volatile	Temperature	C
minindex	Minimum value index	Volatile	Count	Number
update	Write true to this to update the statistics, this is written internally on each update	Volatile	Boolean	Flag

stack_aux_therm_group_2_summary

Name	stack_aux_therm_group_2_summary
Description	Thermistors Summary
Base Address	326496
Instance Count	1

Name	Description	Storage Type	Type	Units
circuit_failure	Will be 1 if any circuit has failed, otherwise 0	Volatile	Boolean	Flag
circuit_failure_count	Count of the thermistors with circuit failures. This will include both installed and uninstalled thermistors	Volatile	Count	Number

stack_aux_therm_group_3

Name	stack_aux_therm_group_3
Description	Component Group
Base Address	320914
Instance Count	1

Name	Description	Storage Type	Type	Units
group_id	Group identifier	Volatile	UInt8	Value
group_name_0	Group name segment 0	Configuration	String	ASCII
group_name_1	Group name segment 1	Configuration	String	ASCII
group_name_2	Group name segment 2	Configuration	String	ASCII
group_name_3	Group name segment 3	Configuration	String	ASCII
group_size	Number of components in the group	Volatile	Count	Number

stack_aux_therm_group_3_stat

Name	stack_aux_therm_group_3_stat
Description	Statistics

Base Address	321116
Instance Count	1

Name	Description	Storage Type	Type	Units
avg	Average value	Volatile	Temperature	C
max	Maximum value	Volatile	Temperature	C
maxindex	Maximum value index	Volatile	Count	Number
min	Minimum value	Volatile	Temperature	C
minindex	Minimum value index	Volatile	Count	Number
update	Write true to this to update the statistics, this is written internally on each update	Volatile	Boolean	Flag

stack_aux_therm_group_3_summary

Name	stack_aux_therm_group_3_summary
Description	Thermistors Summary
Base Address	326512
Instance Count	1

Name	Description	Storage Type	Type	Units
circuit_failure	Will be 1 if any circuit has failed, otherwise 0	Volatile	Boolean	Flag
circuit_failure_count	Count of the thermistors with circuit failures. This will include both installed and uninstalled thermistors	Volatile	Count	Number

stack_fault_aux_therm_group_1_circuit_fail

Name	stack_fault_aux_therm_group_1_circuit_fail
Description	Boolean Trigger
Base Address	326528
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_aux_therm_group_1_consistency

Name	stack_fault_aux_therm_group_1_consistency
Description	Basic Trigger
Base Address	326688
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
thresh	Trigger threshold	Factory	Temperature	C
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_aux_therm_group_1_hi

Name	stack_fault_aux_therm_group_1_hi
Description	Hysteresis Trigger
Base Address	325328
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag

Name	Description	Storage Type	Type	Units
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_fault_aux_therm_group_1_lo

Name	stack_fault_aux_therm_group_1_lo
Description	Hysteresis Trigger
Base Address	325388
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_fault_aux_therm_group_1_over

Name	stack_fault_aux_therm_group_1_over
Description	Basic Trigger
Base Address	325632
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
thresh	Trigger threshold	Factory	Temperature	C
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_aux_therm_group_1_under

Name	stack_fault_aux_therm_group_1_under
Description	Basic Trigger
Base Address	325637
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
thresh	Trigger threshold	Factory	Temperature	C
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_aux_therm_group_2_circuit_fail

Name	stack_fault_aux_therm_group_2_circuit_fail
Description	Boolean Trigger
Base Address	326544
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_aux_therm_group_2_consistency

Name	stack_fault_aux_therm_group_2_consistency
Description	Basic Trigger
Base Address	326704
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
thresh	Trigger threshold	Factory	Temperature	C
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_aux_therm_group_2_hi

Name	stack_fault_aux_therm_group_2_hi
Description	Hysteresis Trigger
Base Address	325400
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag

Name	Description	Storage Type	Type	Units
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_fault_aux_therm_group_2_lo

Name	stack_fault_aux_therm_group_2_lo
Description	Hysteresis Trigger
Base Address	325460
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_fault_aux_therm_group_2_over

Name	stack_fault_aux_therm_group_2_over
Description	Basic Trigger
Base Address	325642
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
thresh	Trigger threshold	Factory	Temperature	C
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_aux_therm_group_2_under

Name	stack_fault_aux_therm_group_2_under
Description	Basic Trigger
Base Address	325647
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
thresh	Trigger threshold	Factory	Temperature	C
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_aux_therm_group_3_circuit_fail

Name	stack_fault_aux_therm_group_3_circuit_fail
Description	Boolean Trigger
Base Address	326560
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_aux_therm_group_3_consistency

Name	stack_fault_aux_therm_group_3_consistency
Description	Basic Trigger
Base Address	326720
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
thresh	Trigger threshold	Factory	Temperature	C
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_aux_therm_group_3_hi

Name	stack_fault_aux_therm_group_3_hi
Description	Hysteresis Trigger
Base Address	325472
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag

Name	Description	Storage Type	Type	Units
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_fault_aux_therm_group_3_lo

Name	stack_fault_aux_therm_group_3_lo
Description	Hysteresis Trigger
Base Address	325532
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_fault_aux_therm_group_3_over

Name	stack_fault_aux_therm_group_3_over
Description	Basic Trigger
Base Address	325652
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
thresh	Trigger threshold	Factory	Temperature	C
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_aux_therm_group_3_under

Name	stack_fault_aux_therm_group_3_under
Description	Basic Trigger
Base Address	325657
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
thresh	Trigger threshold	Factory	Temperature	C
trig	Trigger state	Volatile	Boolean	Flag

stack_fault_ci_auth_wdt

Name	stack_fault_ci_auth_wdt
Description	Boolean Trigger
Base Address	315824
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

stack_thermistors_group

Name	stack_thermistors_group
Description	Component Group
Base Address	320896
Instance Count	1

Name	Description	Storage Type	Type	Units
group_id	Group identifier	Volatile	UInt8	Value
group_name_0	Group name segment 0	Configuration	String	ASCII
group_name_1	Group name segment 1	Configuration	String	ASCII
group_name_2	Group name segment 2	Configuration	String	ASCII
group_name_3	Group name segment 3	Configuration	String	ASCII
group_size	Number of components in the group	Volatile	Count	Number

stack_trig_aux_therm_group_1_hi

Name	stack_trig_aux_therm_group_1_hi
Description	Hysteresis Trigger
Base Address	325352
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS

Name	Description	Storage Type	Type	Units
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_trig_aux_therm_group_1_lo

Name	stack_trig_aux_therm_group_1_lo
Description	Hysteresis Trigger
Base Address	325364
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_trig_aux_therm_group_2_hi

Name	stack_trig_aux_therm_group_2_hi
Description	Hysteresis Trigger
Base Address	325424
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_trig_aux_therm_group_2_lo

Name	stack_trig_aux_therm_group_2_lo
Description	Hysteresis Trigger
Base Address	325436
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

Name	Description	Storage Type	Type	Units
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_trig_aux_therm_group_3_hi

Name	stack_trig_aux_therm_group_3_hi
Description	Hysteresis Trigger
Base Address	325496
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_trig_aux_therm_group_3_lo

Name	stack_trig_aux_therm_group_3_lo
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Description	Hysteresis Trigger
Base Address	325508
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_warn_aux_therm_group_1_hi

Name	stack_warn_aux_therm_group_1_hi
Description	Hysteresis Trigger
Base Address	325340
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag

Name	Description	Storage Type	Type	Units
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_warn_aux_therm_group_1_lo

Name	stack_warn_aux_therm_group_1_lo
Description	Hysteresis Trigger
Base Address	325376
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS

Name	Description	Storage Type	Type	Units
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_warn_aux_therm_group_2_hi

Name	stack_warn_aux_therm_group_2_hi
Description	Hysteresis Trigger
Base Address	325412
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_warn_aux_therm_group_2_lo

Name	stack_warn_aux_therm_group_2_lo
Description	Hysteresis Trigger
Base Address	325448
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_warn_aux_therm_group_3_hi

Name	stack_warn_aux_therm_group_3_hi
Description	Hysteresis Trigger
Base Address	325484
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

Name	Description	Storage Type	Type	Units
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_warn_aux_therm_group_3_lo

Name	stack_warn_aux_therm_group_3_lo
Description	Hysteresis Trigger
Base Address	325520
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Temperature	C
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Temperature	C

stack_warn_low_capacity

Name	stack_warn_low_capacity
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Description	Basic Trigger
Base Address	326624
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
thresh	Trigger threshold	Configuration	Percentage	%
trig	Trigger state	Volatile	Boolean	Flag

stack_warn_precharge_timeout

Name	stack_warn_precharge_timeout
Description	Hysteresis Trigger
Base Address	315968
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Microseconds	uS
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Microseconds	uS

stack_warn_soc_uncalibrated

Name	stack_warn_soc_uncalibrated
Description	Basic Trigger
Base Address	326608
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
thresh	Trigger threshold	Configuration	Charge	mAh
trig	Trigger state	Volatile	Boolean	Flag

therms_group_manager

Name	therms_group_manager
Description	Thermistors Group Manager
Base Address	316976
Instance Count	256

Name	Description	Storage Type	Type	Units
group_id	Assign the instance to the target thermistor group(0 = stack temperature group,1 to 3 = auxiliary temperature groups)	Factory	UInt8	Value

3.5.2. Removed Components

sc_bl_fw_image

Name	sc_bl_fw_image
Description	Build Information
Base Address	156656
Instance Count	1

Name	Description	Storage Type	Type	Units
build_crc	Build CRC16	Manufacturing	UInt16	Value
build_id	Build ID	Manufacturing	String	ASCII
build_time	Time at which the FW was built	Manufacturing	String	ASCII

Name	Description	Storage Type	Type	Units
build_type	Build type of the FW	Manufacturing	String	ASCII
build_user	User who built the binary	Manufacturing	String	ASCII
build_version	Build version	Manufacturing	String	ASCII
revision_id	Processor revision	Manufacturing	UInt64	Value

sc_ci_persist

Name	sc_ci_persist
Description	Persistent Parameters
Base Address	25552
Instance Count	1

Name	Description	Storage Type	Type	Units
crc	CRC16 of the persistent partition	Volatile	UInt16	Value
error	Whether an error has occurred during save/load	Volatile	Boolean	Flag
initialized	Whether the component has been initialized	Volatile	Boolean	Flag
load	Load persistent parameters	Volatile	Boolean	Flag
reset	Reset the persistent parameters, NOTICE: use with caution, this cannot be undone	Volatile	Boolean	Flag
save	Save persistent parameters	Volatile	Boolean	Flag
verification_error	Whether an error has occurred during verification	Volatile	Boolean	Flag
verify	Verify partition against in-register data	Volatile	Boolean	Flag

sc_clock_err_stats

Name	sc_clock_err_stats
Description	Timing Statistics
Base Address	169008
Instance Count	1

Name	Description	Storage Type	Type	Units
avgtime	Average round-trip time	Volatile	Microseconds	uS
diff	Latest time difference to update the statistics	Volatile	Microseconds	uS
maxtime	Maximum round-trip time	Volatile	Microseconds	uS
mintime	Minimum round-trip time	Volatile	Microseconds	uS
msgcount	Total number of messages	Volatile	UInt64	Value
reset	Writing to this resets the statistics	Volatile	Boolean	Flag

sc_fault_clocks

Name	sc_fault_clocks
Description	Standalone Trigger
Base Address	153904
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
error	True when the trigger should trip, otherwise false	Volatile	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

ssg_afe_fresh

Name	ssg_afe_fresh
Description	Freshness
Base Address	303328
Instance Count	1

Name	Description	Storage Type	Type	Units
last_update_time	Time the data was last updated	Volatile	Microseconds	uS
max_update_period	Max time period between updates to the monitored data	Volatile	Microseconds	uS
period	Time period within which the data needs to be updated before it is stale	Factory	Microseconds	uS
refreshed	This register is updated internally when all associated data has been refreshed	Volatile	Boolean	Flag
stale	1 indicates the associated data has not been updated within the configured time. 0 indicates the data is still fresh	Volatile	Boolean	Flag
update	Writing to this register triggers an evaluation of the freshness	Volatile	Boolean	Flag

ssg_afe_uptime_watchdog

Name	ssg_afe_uptime_watchdog
Description	Value Watchdog

Base Address	314176
Instance Count	1

Name	Description	Storage Type	Type	Units
expired	1 indicates the watchdog expired, 0 indicates it has not expired. Writing a changed value to the dependency resets the internal timer	Volatile	Boolean	Flag
last_update_time	Last time the watchdog was updated	Volatile	Microseconds	uS
max_update_period	Max time period ever seen by the watchdog between updates	Volatile	Microseconds	uS
period	Time period within which the watchdog needs to be updated before it expires	Factory	Microseconds	uS

ssg_fault_afe_wdt

Name	ssg_fault_afe_wdt
Description	Boolean Trigger
Base Address	303392
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

ssg_fault_gpi

Name	ssg_fault_gpi
Description	Hysteresis Trigger
Base Address	313952
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag

Name	Description	Storage Type	Type	Units
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Boolean	Flag
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Boolean	Flag

ssg_gpi_error_fault

Name	ssg_gpi_error_fault
Description	GPI Error
Base Address	313984
Instance Count	1

Name	Description	Storage Type	Type	Units
error	Intermediate register to facilitate hysteresis gpi trigger	Volatile	Boolean	Flag

ssg_gpi_error_warn

Name	ssg_gpi_error_warn
Description	GPI Error
Base Address	313968
Instance Count	1

Name	Description	Storage Type	Type	Units
error	Intermediate register to facilitate hysteresis gpi trigger	Volatile	Boolean	Flag

ssg_trig_afe_uptime_stalled

Name	ssg_trig_afe_uptime_stalled
Description	Boolean Trigger
Base Address	314288

Instance Count	1			
Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
trig	Trigger state	Volatile	Boolean	Flag

ssg_warn_gpi

Name	ssg_warn_gpi
Description	Hysteresis Trigger
Base Address	313936
Instance Count	1

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Boolean	Flag
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Boolean	Flag

stack_fault_precharge_over_current

Name	stack_fault_precharge_over_current
Description	Hysteresis Trigger
Base Address	301776

Instance Count	1			
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Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Factory	Microseconds	uS
initialized	True if the component has been initialized by at least one sample	Volatile	Boolean	Flag
inverted	True if triggers on low value, false if on high value	Volatile	Boolean	Flag
latched	True if the component should latch in the tripped state until manually cleared	Factory	Boolean	Flag
thresh	Trigger threshold	Factory	Current	mA
time_hyst	Trigger time hysteresis	Factory	Microseconds	uS
time_triggered	Time the triggered state was set to true (relative to system boot time)	Volatile	Microseconds	uS
trig	Trigger state	Volatile	Boolean	Flag
trigger_duration	Time the triggered state was true before resetting to false	Volatile	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Current	mA

3.5.3. Changed Components

cell

Current Component Details

Name	cell
Description	Cell Value Parameters
Base Address	8192
Instance Count	768

Previous Component Details

Name	cell
Description	Cell Value Parameters
Base Address	8192
Instance Count	480

cell_balance_values

Current Component Details

Name	cell_balance_values
Description	Cell Balancing Values
Base Address	87008
Instance Count	768

Previous Component Details

Name	cell_balance_values
Description	Cell Balancing Values
Base Address	87008
Instance Count	480

cell_balancing_throttling

Current Component Details

Name	cell_balancing_throttling
Description	Cell Balancing Throttling
Base Address	313040
Instance Count	768

Previous Component Details

Name	cell_balancing_throttling
Description	Cell Balancing Throttling
Base Address	311600
Instance Count	480

cell_charge

Current Component Details

Name	cell_charge
Description	Cell Charge Parameters
Base Address	234464
Instance Count	768

Previous Component Details

Name	cell_charge
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Description	Cell Charge Parameters
Base Address	234464
Instance Count	480

cell_imbalance

Current Component Details

Name	cell_imbalance
Description	Cell Imbalance
Base Address	311776
Instance Count	768

Previous Component Details

Name	cell_imbalance
Description	Cell Imbalance
Base Address	310624
Instance Count	480

cell_model

Current Component Details

Name	cell_model
Description	Estimated Cell Model Parameter
Base Address	282368
Instance Count	768

Previous Component Details

Name	cell_model
Description	Estimated Cell Model Parameter
Base Address	282368
Instance Count	480

cell_open_wire_diagnostics

Current Component Details

Name	cell_open_wire_diagnostics
Description	Diagnostics Of Open Wire Scans

Base Address	290470
Instance Count	768

Previous Component Details

Name	cell_open_wire_diagnostics
Description	Diagnostics Of Open Wire Scans
Base Address	290470
Instance Count	480

cell_soc_distribution

Current Component Details

Name	cell_soc_distribution
Description	Cell Soc Distribution
Base Address	308496
Instance Count	768

Previous Component Details

Name	cell_soc_distribution
Description	Cell Soc Distribution
Base Address	308496
Instance Count	480

cell_states

Current Component Details

Name	cell_states
Description	Estimated Cell States And Uncertainty
Base Address	294650
Instance Count	768

Previous Component Details

Name	cell_states
Description	Estimated Cell States And Uncertainty
Base Address	294650
Instance Count	480

ci

Current Component Details

Name	ci
Description	Cell Interface Parameters
Base Address	20480
Instance Count	32

Previous Component Details

Name	ci
Description	Cell Interface Parameters
Base Address	20480
Instance Count	20

ci_internal_temp_stat

Current Component Details

Name	ci_internal_temp_stat
Description	Statistics
Base Address	312976
Instance Count	1

Previous Component Details

Name	ci_internal_temp_stat
Description	Statistics
Base Address	311536
Instance Count	1

ci_mfg_info

Current Component Details

Name	ci_mfg_info
Description	Manufacturing Info
Base Address	22736
Instance Count	32

Previous Component Details

Name	ci_mfg_info
Description	Manufacturing Info
Base Address	22736
Instance Count	20

sc_bitfield_fault_helper

Current Component Details

Name	sc_bitfield_fault_helper
Description	Bitfield Helper
Base Address	137184
Instance Count	118

Previous Component Details

Name	sc_bitfield_fault_helper
Description	Bitfield Helper
Base Address	137184
Instance Count	92

sc_bitfield_user_trig_helper

Current Component Details

Name	sc_bitfield_user_trig_helper
Description	Bitfield Helper
Base Address	137696
Instance Count	31

Previous Component Details

Name	sc_bitfield_user_trig_helper
Description	Bitfield Helper
Base Address	137696
Instance Count	26

sc_bitfield_warning_helper

Current Component Details

Name	sc_bitfield_warning_helper
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Description	Bitfield Helper
Base Address	137440
Instance Count	41

Previous Component Details

Name	sc_bitfield_warning_helper
Description	Bitfield Helper
Base Address	137440
Instance Count	25

sc_bms_restore_backup

Current Component Details

Name	sc_bms_restore_backup
Description	Persistent Parameters
Base Address	315264
Instance Count	1

Previous Component Details

Name	sc_bms_restore_backup
Description	Persistent Parameters
Base Address	313536
Instance Count	1

sc_board_stat

Current Component Details

Name	sc_board_stat
Description	Timing Statistics
Base Address	315216
Instance Count	1

Previous Component Details

Name	sc_board_stat
Description	Timing Statistics
Base Address	313488

Instance Count	1
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sc_ci_internal_temps_fresh

Current Component Details

Name	sc_ci_internal_temps_fresh
Description	Freshness
Base Address	312704
Instance Count	1

Previous Component Details

Name	sc_ci_internal_temps_fresh
Description	Freshness
Base Address	311264
Instance Count	1

sc_ci_therm_mux_test_fresh

Current Component Details

Name	sc_ci_therm_mux_test_fresh
Description	Freshness
Base Address	314080
Instance Count	1

Previous Component Details

Name	sc_ci_therm_mux_test_fresh
Description	Freshness
Base Address	312352
Instance Count	1

sc_factory_lockdown

Current Component Details

Name	sc_factory_lockdown
Description	Factory Lockdown
Base Address	315760
Instance Count	1

Previous Component Details

Name	sc_factory_lockdown
Description	Factory Lockdown
Base Address	314032
Instance Count	1

sc_factory_restore_backup

Current Component Details

Name	sc_factory_restore_backup
Description	Persistent Parameters
Base Address	315232
Instance Count	1

Previous Component Details

Name	sc_factory_restore_backup
Description	Persistent Parameters
Base Address	313504
Instance Count	1

sc_fault_batt_hysteresis_aggregate

Current Component Details

Name	sc_fault_batt_hysteresis_aggregate
Description	Trigger Aggregate
Base Address	280608
Instance Count	1

Previous Component Details

Name	sc_fault_batt_hysteresis_aggregate
Description	Trigger Aggregate
Base Address	280624
Instance Count	1

sc_fault_ci_auth

Current Component Details

Name	sc_fault_ci_auth
Description	Hysteresis Trigger
Base Address	313024
Instance Count	1

Previous Component Details

Name	sc_fault_ci_auth
Description	Hysteresis Trigger
Base Address	311584
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

sc_fault_ci_internal_temp_over

Current Component Details

Name	sc_fault_ci_internal_temp_over
Description	Hysteresis Trigger
Base Address	312992
Instance Count	1

Previous Component Details

Name	sc_fault_ci_internal_temp_over
Description	Hysteresis Trigger
Base Address	311552
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

sc_fault_ci_therm_mux_fail

Current Component Details

Name	sc_fault_ci_therm_mux_fail
Description	Boolean Trigger
Base Address	314064
Instance Count	1

Previous Component Details

Name	sc_fault_ci_therm_mux_fail
Description	Boolean Trigger
Base Address	312336
Instance Count	1

sc_fault_ci_therm_mux_fail_wdt

Current Component Details

Name	sc_fault_ci_therm_mux_fail_wdt
Description	Boolean Trigger
Base Address	314096
Instance Count	1

Previous Component Details

Name	sc_fault_ci_therm_mux_fail_wdt
Description	Boolean Trigger
Base Address	312368
Instance Count	1

sc_fault_comm_hysteresis_aggregate

Current Component Details

Name	sc_fault_comm_hysteresis_aggregate
Description	Trigger Aggregate
Base Address	280624
Instance Count	1

Previous Component Details

Name	sc_fault_comm_hysteresis_aggregate
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Description	Trigger Aggregate
Base Address	280608
Instance Count	1

sc_fault_controller_wdt

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

sc_fault_register_link

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

sc_linkbus

Added Registers

Name	Description	Storage Type	Type	Units
authentication_key_slot	Key slot to use for CI authentication	Factory	UInt8	Value
ci_detection_last_scan_time	Time when the last CI detection scan completed	Volatile	Microseconds	uS
ci_detection_manual_scan	Set to 1 to manually trigger a CI detection scan	Volatile	Boolean	Flag
detected_chip_count	Detected chip count	Volatile	Count	Number
detected_ci_count	Detected CI count	Volatile	Count	Number
geardown_clock_rate	Geardown clock rate	Factory	UInt32	Value
therm_mux_gnd_threshold	Voltage that the thermistor mux test considers a short circuit	Factory	Voltage	mV
wakeup_byte_resend_time_thresh	Wake-up byte resend time threshold	Factory	Microseconds	uS

sc_mfg_lockdown

Current Component Details

Name	sc_mfg_lockdown
Description	Lockdown
Base Address	315728
Instance Count	1

Previous Component Details

Name	sc_mfg_lockdown
Description	Lockdown
Base Address	314000
Instance Count	1

sc_network_restore_backup

Current Component Details

Name	sc_network_restore_backup
Description	Persistent Parameters
Base Address	315552
Instance Count	1

Previous Component Details

Name	sc_network_restore_backup
Description	Persistent Parameters
Base Address	313824
Instance Count	1

sc_service_expiry

Added Registers

Name	Description	Storage Type	Type	Units
enabled	Set to 1 to enable expiry	Configuration	Boolean	Flag
expired	True if enabled and expiry_time seconds have elapsed	Volatile	Boolean	Flag

Changed Registers

Current Register Details

Name	Description	Storage Type	Type	Units
expiry_time	Expiry time in seconds	Configuration	UInt64	Value

Previous Register Details

Name	Description	Storage Type	Type	Units
expiry_time	Expiry time in seconds	Volatile	UInt64	Value

sc_upgrade_count

Added Registers

Name	Description	Storage Type	Type	Units
rollback_failure_count	How many times firmware upgrade rollback failed	Volatile	Count	Number
rollback_success_count	How many times firmware upgrades were successfully rolled back	Volatile	Count	Number
success_count	How many times the software has been upgraded	Volatile	Count	Number

Removed Registers

Name	Description	Storage Type	Type	Units
factory_restore_count	How many times the system has been restored to factory settings	Volatile	Count	Number
upgrade_count	How many times the software has been upgraded	Volatile	Count	Number

sc_warn_bms_backup_error

Current Component Details

Name	sc_warn_bms_backup_error
Description	Boolean Trigger
Base Address	315344
Instance Count	1

Previous Component Details

Name	sc_warn_bms_backup_error
Description	Boolean Trigger
Base Address	313616
Instance Count	1

sc_warn_controller_wdt

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

sc_warn_factory_backup_error

Current Component Details

Name	sc_warn_factory_backup_error
Description	Boolean Trigger
Base Address	315312
Instance Count	1

Previous Component Details

Name	sc_warn_factory_backup_error
Description	Boolean Trigger
Base Address	313584
Instance Count	1

sc_warn_network_backup_error

Current Component Details

Name	sc_warn_network_backup_error
Description	Boolean Trigger
Base Address	315600
Instance Count	1

Previous Component Details

Name	sc_warn_network_backup_error
Description	Boolean Trigger
Base Address	313872
Instance Count	1

ssg_afe_afe_fsm_time_stats

Current Component Details

Name	ssg_afe_afe_fsm_time_stats
Description	SSG AFE Timing Statistics
Base Address	314928
Instance Count	1

Previous Component Details

Name	ssg_afe_afe_fsm_time_stats
Description	SSG AFE Timing Statistics
Base Address	313200
Instance Count	1

ssg_afe_afe_update_watchdog

Current Component Details

Name	ssg_afe_afe_update_watchdog
Description	Value Watchdog
Base Address	316288
Instance Count	1

Previous Component Details

Name	ssg_afe_afe_update_watchdog
Description	Value Watchdog
Base Address	314256
Instance Count	1

ssg_afe_bus_measurements

Current Component Details

Name	ssg_afe_bus_measurements
Description	Battery Stack And DC Bus Measurements
Base Address	314752
Instance Count	1

Previous Component Details

Name	ssg_afe_bus_measurements
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Description	Battery Stack And DC Bus Measurements
Base Address	313024
Instance Count	1

ssg_afe_cpu_bist_fresh

Current Component Details

Name	ssg_afe_cpu_bist_fresh
Description	Freshness
Base Address	314464
Instance Count	1

Previous Component Details

Name	ssg_afe_cpu_bist_fresh
Description	Freshness
Base Address	312736
Instance Count	1

ssg_afe_cpu_bist_update_watchdog

Current Component Details

Name	ssg_afe_cpu_bist_update_watchdog
Description	Value Watchdog
Base Address	316240
Instance Count	1

Previous Component Details

Name	ssg_afe_cpu_bist_update_watchdog
Description	Value Watchdog
Base Address	314208
Instance Count	1

ssg_afe_cpu_test_fsm_time_stats

Current Component Details

Name	ssg_afe_cpu_test_fsm_time_stats
Description	SSG AFE Timing Statistics

Base Address	314976
Instance Count	1

Previous Component Details

Name	ssg_afe_cpu_test_fsm_time_stats
Description	SSG AFE Timing Statistics
Base Address	313248
Instance Count	1

ssg_afe_errors

Current Component Details

Name	ssg_afe_errors
Description	Error Diagnostics For The SSG AFE
Base Address	316704
Instance Count	1

Previous Component Details

Name	ssg_afe_errors
Description	Error Diagnostics For The SSG AFE
Base Address	302688
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
discarded_power_measurement_count	Indicates how many power measurements have been discarded due to BIST failures	Volatile	Count	Number
discarded_therm_measurement_count	Indicates how many thermistor measurements have been discarded due to BIST failures	Volatile	Count	Number
reset_attempt_count	Indicates how many forced AFE resets have been attempted	Volatile	Count	Number
reset_success_count	Indicates how many forced AFE resets have succeeded	Volatile	Count	Number

ssg_afe_ipc_fsm_time_stats

Current Component Details

Name	ssg_afe_ipc_fsm_time_stats
Description	SSG AFE Timing Statistics
Base Address	314912
Instance Count	1

Previous Component Details

Name	ssg_afe_ipc_fsm_time_stats
Description	SSG AFE Timing Statistics
Base Address	313184
Instance Count	1

ssg_afe_ram_bist_fresh

Current Component Details

Name	ssg_afe_ram_bist_fresh
Description	Freshness
Base Address	314432
Instance Count	1

Previous Component Details

Name	ssg_afe_ram_bist_fresh
Description	Freshness
Base Address	312704
Instance Count	1

ssg_afe_ram_bist_update_watchdog

Current Component Details

Name	ssg_afe_ram_bist_update_watchdog
Description	Value Watchdog
Base Address	316256
Instance Count	1

Previous Component Details

Name	ssg_afe_ram_bist_update_watchdog
Description	Value Watchdog

Base Address	314224
Instance Count	1

ssg_afe_ram_test_fsm_time_stats

Current Component Details

Name	ssg_afe_ram_test_fsm_time_stats
Description	SSG AFE Timing Statistics
Base Address	314992
Instance Count	1

Previous Component Details

Name	ssg_afe_ram_test_fsm_time_stats
Description	SSG AFE Timing Statistics
Base Address	313264
Instance Count	1

ssg_afe_rom_bist_fresh

Current Component Details

Name	ssg_afe_rom_bist_fresh
Description	Freshness
Base Address	314352
Instance Count	1

Previous Component Details

Name	ssg_afe_rom_bist_fresh
Description	Freshness
Base Address	312624
Instance Count	1

ssg_afe_rom_bist_update_watchdog

Current Component Details

Name	ssg_afe_rom_bist_update_watchdog
Description	Value Watchdog
Base Address	316272

Instance Count	1
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Previous Component Details

Name	ssg_afe_rom_bist_update_watchdog
Description	Value Watchdog
Base Address	314240
Instance Count	1

ssg_afe_rom_test_fsm_time_stats

Current Component Details

Name	ssg_afe_rom_test_fsm_time_stats
Description	SSG AFE Timing Statistics
Base Address	314960
Instance Count	1

Previous Component Details

Name	ssg_afe_rom_test_fsm_time_stats
Description	SSG AFE Timing Statistics
Base Address	313232
Instance Count	1

ssg_afe_temperature_update_watchdog

Current Component Details

Name	ssg_afe_temperature_update_watchdog
Description	Value Watchdog
Base Address	316304
Instance Count	1

Previous Component Details

Name	ssg_afe_temperature_update_watchdog
Description	Value Watchdog
Base Address	314272
Instance Count	1

ssg_afe_thermistor_bist_fresh

Current Component Details

Name	ssg_afe_thermistor_bist_fresh
Description	Freshness
Base Address	314576
Instance Count	1

Previous Component Details

Name	ssg_afe_thermistor_bist_fresh
Description	Freshness
Base Address	312848
Instance Count	1

ssg_afe_thermistor_bist_update_watchdog

Current Component Details

Name	ssg_afe_thermistor_bist_update_watchdog
Description	Value Watchdog
Base Address	316224
Instance Count	1

Previous Component Details

Name	ssg_afe_thermistor_bist_update_watchdog
Description	Value Watchdog
Base Address	314192
Instance Count	1

ssg_afe_thermistor_fsm_time_stats

Current Component Details

Name	ssg_afe_thermistor_fsm_time_stats
Description	SSG AFE Timing Statistics
Base Address	314944
Instance Count	1

Previous Component Details

Name	ssg_afe_thermistor_fsm_time_stats
Description	SSG AFE Timing Statistics
Base Address	313216
Instance Count	1

ssg_afe_time_stat

Current Component Details

Name	ssg_afe_time_stat
Description	Timing Statistics
Base Address	314016
Instance Count	1

Previous Component Details

Name	ssg_afe_time_stat
Description	Timing Statistics
Base Address	312288
Instance Count	1

ssg_ambient_fuse_temp_diff

Current Component Details

Name	ssg_ambient_fuse_temp_diff
Description	Maximum Difference Of Input Values
Base Address	315184
Instance Count	1

Previous Component Details

Name	ssg_ambient_fuse_temp_diff
Description	Maximum Difference Of Input Values
Base Address	313456
Instance Count	1

ssg_ambient_therm

Current Component Details

Name	ssg_ambient_therm
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Description	Thermistors Parameters
Base Address	314256
Instance Count	1

Previous Component Details

Name	ssg_ambient_therm
Description	Thermistors Parameters
Base Address	312528
Instance Count	1

ssg_board_info

Current Component Details

Name	ssg_board_info
Description	BMS Board Information
Base Address	314736
Instance Count	1

Previous Component Details

Name	ssg_board_info
Description	BMS Board Information
Base Address	313008
Instance Count	1

ssg_bus_power

Current Component Details

Name	ssg_bus_power
Description	Power Parameters
Base Address	314784
Instance Count	1

Previous Component Details

Name	ssg_bus_power
Description	Power Parameters
Base Address	313056

Instance Count	1
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Added Registers

Name	Description	Storage Type	Type	Units
current_offset	Current offset adjustment	Configuration	Current	mA
current_offset_limit	Current offset adjustment limit	Factory	Current	mA

ssg_bus_power_monitor

Current Component Details

Name	ssg_bus_power_monitor
Description	Monitors Bus Power
Base Address	315104
Instance Count	1

Previous Component Details

Name	ssg_bus_power_monitor
Description	Monitors Bus Power
Base Address	313376
Instance Count	1

ssg_clock_accuracy_test_wdt

Current Component Details

Name	ssg_clock_accuracy_test_wdt
Description	Watchdog
Base Address	314848
Instance Count	1

Previous Component Details

Name	ssg_clock_accuracy_test_wdt
Description	Watchdog
Base Address	313120
Instance Count	1

ssg_cpu_register_self_test_config

Current Component Details

Name	ssg_cpu_register_self_test_config
Description	Cpu Register Self Test Configuration
Base Address	314144
Instance Count	1

Previous Component Details

Name	ssg_cpu_register_self_test_config
Description	Cpu Register Self Test Configuration
Base Address	312416
Instance Count	1

ssg_cpu_register_self_test_wdt

Current Component Details

Name	ssg_cpu_register_self_test_wdt
Description	Watchdog
Base Address	314112
Instance Count	1

Previous Component Details

Name	ssg_cpu_register_self_test_wdt
Description	Watchdog
Base Address	312384
Instance Count	1

ssg_enable

Current Component Details

Name	ssg_enable
Description	General Purpose Input Parameters
Base Address	315376
Instance Count	1

Previous Component Details

Name	ssg_enable
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Description	General Purpose Input Parameters
Base Address	313648
Instance Count	1

ssg_factory_restore_0

Current Component Details

Name	ssg_factory_restore_0
Description	General Purpose Input Parameters
Base Address	315408
Instance Count	1

Previous Component Details

Name	ssg_factory_restore_0
Description	General Purpose Input Parameters
Base Address	313680
Instance Count	1

ssg_factory_restore_1

Current Component Details

Name	ssg_factory_restore_1
Description	General Purpose Input Parameters
Base Address	315424
Instance Count	1

Previous Component Details

Name	ssg_factory_restore_1
Description	General Purpose Input Parameters
Base Address	313696
Instance Count	1

ssg_fan_control_ac

Current Component Details

Name	ssg_fan_control_ac
Description	SSG AC Fan Control

Base Address	312912
Instance Count	1

Previous Component Details

Name	ssg_fan_control_ac
Description	SSG AC Fan Control
Base Address	311472
Instance Count	1

ssg_fan_control_dc

Current Component Details

Name	ssg_fan_control_dc
Description	SSG DC Fan Control
Base Address	312928
Instance Count	1

Previous Component Details

Name	ssg_fan_control_dc
Description	SSG DC Fan Control
Base Address	311488
Instance Count	1

ssg_fault_afe_adc_register_bist

Current Component Details

Name	ssg_fault_afe_adc_register_bist
Description	Hysteresis Trigger
Base Address	314496
Instance Count	1

Previous Component Details

Name	ssg_fault_afe_adc_register_bist
Description	Hysteresis Trigger
Base Address	312768
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

ssg_fault_afe_cpu_bist_fresh_wdt

Current Component Details

Name	ssg_fault_afe_cpu_bist_fresh_wdt
Description	Boolean Trigger
Base Address	314480
Instance Count	1

Previous Component Details

Name	ssg_fault_afe_cpu_bist_fresh_wdt
Description	Boolean Trigger
Base Address	312752
Instance Count	1

ssg_fault_afe_ram_bist_fresh_wdt

Current Component Details

Name	ssg_fault_afe_ram_bist_fresh_wdt
Description	Boolean Trigger
Base Address	314448
Instance Count	1

Previous Component Details

Name	ssg_fault_afe_ram_bist_fresh_wdt
Description	Boolean Trigger
Base Address	312720
Instance Count	1

ssg_fault_afe_reset

Current Component Details

Name	ssg_fault_afe_reset
Description	Boolean Trigger
Base Address	314720
Instance Count	1

Previous Component Details

Name	ssg_fault_afe_reset
Description	Boolean Trigger
Base Address	312992
Instance Count	1

ssg_fault_afe_rom_bist_fresh_wdt

Current Component Details

Name	ssg_fault_afe_rom_bist_fresh_wdt
Description	Boolean Trigger
Base Address	314368
Instance Count	1

Previous Component Details

Name	ssg_fault_afe_rom_bist_fresh_wdt
Description	Boolean Trigger
Base Address	312640
Instance Count	1

ssg_fault_afe_spi_cs_bist

Current Component Details

Name	ssg_fault_afe_spi_cs_bist
Description	Hysteresis Trigger
Base Address	314512
Instance Count	1

Previous Component Details

Name	ssg_fault_afe_spi_cs_bist
Description	Hysteresis Trigger

Base Address	312784
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

ssg_fault_afe_spi_data_bist

Current Component Details

Name	ssg_fault_afe_spi_data_bist
Description	Hysteresis Trigger
Base Address	314608
Instance Count	1

Previous Component Details

Name	ssg_fault_afe_spi_data_bist
Description	Hysteresis Trigger
Base Address	312880
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

ssg_fault_afe_thermistor_bist

Current Component Details

Name	ssg_fault_afe_thermistor_bist
Description	Hysteresis Trigger
Base Address	314336
Instance Count	1

Previous Component Details

Name	ssg_fault_afe_thermistor_bist
Description	Hysteresis Trigger
Base Address	312608
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

ssg_fault_afe_thermistor_bist_fresh_wdt

Current Component Details

Name	ssg_fault_afe_thermistor_bist_fresh_wdt
Description	Boolean Trigger
Base Address	314592
Instance Count	1

Previous Component Details

Name	ssg_fault_afe_thermistor_bist_fresh_wdt
Description	Boolean Trigger
Base Address	312864
Instance Count	1

ssg_fault_ambient_therm_fail

Current Component Details

Name	ssg_fault_ambient_therm_fail
Description	Basic Trigger
Base Address	315200
Instance Count	1

Previous Component Details

Name	ssg_fault_ambient_therm_fail
Description	Basic Trigger
Base Address	313472

Instance Count	1
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ssg_fault_bus_charge_current_over

Current Component Details

Name	ssg_fault_bus_charge_current_over
Description	Basic Trigger
Base Address	316192
Instance Count	1

Previous Component Details

Name	ssg_fault_bus_charge_current_over
Description	Basic Trigger
Base Address	314432
Instance Count	1

ssg_fault_bus_discharge_current_over

Current Component Details

Name	ssg_fault_bus_discharge_current_over
Description	Basic Trigger
Base Address	316160
Instance Count	1

Previous Component Details

Name	ssg_fault_bus_discharge_current_over
Description	Basic Trigger
Base Address	314416
Instance Count	1

ssg_fault_charge_current_hi

Current Component Details

Name	ssg_fault_charge_current_hi
Description	Hysteresis Trigger
Base Address	316080
Instance Count	1

Previous Component Details

Name	ssg_fault_charge_current_hi
Description	Hysteresis Trigger
Base Address	314096
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

ssg_fault_charge_current_over

Current Component Details

Name	ssg_fault_charge_current_over
Description	Basic Trigger
Base Address	316064
Instance Count	1

Previous Component Details

Name	ssg_fault_charge_current_over
Description	Basic Trigger
Base Address	314080
Instance Count	1

ssg_fault_clock_accuracy_test_wdt

Current Component Details

Name	ssg_fault_clock_accuracy_test_wdt
Description	Boolean Trigger
Base Address	314864
Instance Count	1

Previous Component Details

Name	ssg_fault_clock_accuracy_test_wdt
Description	Boolean Trigger

Base Address	313136
Instance Count	1

ssg_fault_cpu_register_self_test_wdt

Current Component Details

Name	ssg_fault_cpu_register_self_test_wdt
Description	Boolean Trigger
Base Address	314128
Instance Count	1

Previous Component Details

Name	ssg_fault_cpu_register_self_test_wdt
Description	Boolean Trigger
Base Address	312400
Instance Count	1

ssg_fault_currents_mismatch

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

ssg_fault_discharge_current_hi

Current Component Details

Name	ssg_fault_discharge_current_hi
Description	Hysteresis Trigger
Base Address	316096
Instance Count	1

Previous Component Details

Name	ssg_fault_discharge_current_hi
Description	Hysteresis Trigger
Base Address	314112

Instance Count	1
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Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

ssg_fault_discharge_current_over

Current Component Details

Name	ssg_fault_discharge_current_over
Description	Basic Trigger
Base Address	316112
Instance Count	1

Previous Component Details

Name	ssg_fault_discharge_current_over
Description	Basic Trigger
Base Address	314128
Instance Count	1

ssg_fault_power_conn_temp_consistency

Current Component Details

Name	ssg_fault_power_conn_temp_consistency
Description	Basic Trigger
Base Address	315168
Instance Count	1

Previous Component Details

Name	ssg_fault_power_conn_temp_consistency
Description	Basic Trigger
Base Address	313440
Instance Count	1

ssg_fault_power_conn_temp_over

Current Component Details

Name	ssg_fault_power_conn_temp_over
Description	Basic Trigger
Base Address	314656
Instance Count	1

Previous Component Details

Name	ssg_fault_power_conn_temp_over
Description	Basic Trigger
Base Address	312928
Instance Count	1

ssg_fault_temperature_short_shunt

Current Component Details

Name	ssg_fault_temperature_short_shunt
Description	Hysteresis Trigger
Base Address	315008
Instance Count	1

Previous Component Details

Name	ssg_fault_temperature_short_shunt
Description	Hysteresis Trigger
Base Address	313280
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

ssg_fault_therm_circuit_fail

Current Component Details

Name	ssg_fault_therm_circuit_fail
Description	Boolean Trigger

Base Address	315056
Instance Count	1

Previous Component Details

Name	ssg_fault_therm_circuit_fail
Description	Boolean Trigger
Base Address	313328
Instance Count	1

ssg_fault_therms_wdt

Current Component Details

Name	ssg_fault_therms_wdt
Description	Boolean Trigger
Base Address	314560
Instance Count	1

Previous Component Details

Name	ssg_fault_therms_wdt
Description	Boolean Trigger
Base Address	312832
Instance Count	1

ssg_fault_unexpected_bus_voltage

Current Component Details

Name	ssg_fault_unexpected_bus_voltage
Description	Hysteresis Trigger
Base Address	315120
Instance Count	1

Previous Component Details

Name	ssg_fault_unexpected_bus_voltage
Description	Hysteresis Trigger
Base Address	313392
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

ssg_fault_vcoil_state_mismatch

Current Component Details

Name	ssg_fault_vcoil_state_mismatch
Description	Hysteresis Trigger
Base Address	315136
Instance Count	1

Previous Component Details

Name	ssg_fault_vcoil_state_mismatch
Description	Hysteresis Trigger
Base Address	313408
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

ssg_fault_vcoil_voltage_over

Current Component Details

Name	ssg_fault_vcoil_voltage_over
Description	Hysteresis Trigger
Base Address	314816
Instance Count	1

Previous Component Details

Name	ssg_fault_vcoil_voltage_over
Description	Hysteresis Trigger

Base Address	313088
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

ssg_fault_vcoil_voltage_range

Current Component Details

Name	ssg_fault_vcoil_voltage_range
Description	Hysteresis Range Trigger
Base Address	314832
Instance Count	1

Previous Component Details

Name	ssg_fault_vcoil_voltage_range
Description	Hysteresis Range Trigger
Base Address	313104
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

ssg_fault_voltage_over

Current Component Details

Name	ssg_fault_voltage_over
Description	Basic Trigger
Base Address	316144
Instance Count	1

Previous Component Details

Name	ssg_fault_voltage_over
Description	Basic Trigger
Base Address	314160
Instance Count	1

ssg_fram_persist

Current Component Details

Name	ssg_fram_persist
Description	Persistent Parameters
Base Address	315504
Instance Count	1

Previous Component Details

Name	ssg_fram_persist
Description	Persistent Parameters
Base Address	313776
Instance Count	1

ssg_fuse_therm

Current Component Details

Name	ssg_fuse_therm
Description	Thermistors Parameters
Base Address	314288
Instance Count	1

Previous Component Details

Name	ssg_fuse_therm
Description	Thermistors Parameters
Base Address	312560
Instance Count	1

ssg_mfg_lockdown

Current Component Details

Name	ssg_mfg_lockdown
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Description	Lockdown
Base Address	315744
Instance Count	1

Previous Component Details

Name	ssg_mfg_lockdown
Description	Lockdown
Base Address	314016
Instance Count	1

ssg_on_board_therm

Current Component Details

Name	ssg_on_board_therm
Description	Thermistors Parameters
Base Address	315472
Instance Count	2

Previous Component Details

Name	ssg_on_board_therm
Description	Thermistors Parameters
Base Address	313744
Instance Count	2

ssg_on_board_therm_circuit

Current Component Details

Name	ssg_on_board_therm_circuit
Description	Thermistor Circuit Parameters
Base Address	315440
Instance Count	1

Previous Component Details

Name	ssg_on_board_therm_circuit
Description	Thermistor Circuit Parameters
Base Address	313712

Instance Count	1
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ssg_on_board_therm_poly

Current Component Details

Name	ssg_on_board_therm_poly
Description	Polynomial Parameters
Base Address	315456
Instance Count	1

Previous Component Details

Name	ssg_on_board_therm_poly
Description	Polynomial Parameters
Base Address	313728
Instance Count	1

ssg_power_conn_temp_diff

Current Component Details

Name	ssg_power_conn_temp_diff
Description	Maximum Difference Of Input Values
Base Address	315152
Instance Count	1

Previous Component Details

Name	ssg_power_conn_temp_diff
Description	Maximum Difference Of Input Values
Base Address	313424
Instance Count	1

ssg_power_conn_temp_stats

Current Component Details

Name	ssg_power_conn_temp_stats
Description	Statistics
Base Address	314640
Instance Count	1

Previous Component Details

Name	ssg_power_conn_temp_stats
Description	Statistics
Base Address	312912
Instance Count	1

ssg_power_conn_therms

Current Component Details

Name	ssg_power_conn_therms
Description	Thermistors Parameters
Base Address	314192
Instance Count	4

Previous Component Details

Name	ssg_power_conn_therms
Description	Thermistors Parameters
Base Address	312464
Instance Count	4

ssg_rtc_clock

Current Component Details

Name	ssg_rtc_clock
Description	Clocking Component
Base Address	315488
Instance Count	1

Previous Component Details

Name	ssg_rtc_clock
Description	Clocking Component
Base Address	313760
Instance Count	1

ssg_self_test_config

Current Component Details

Name	ssg_self_test_config
Description	SSG Internal Test Configurations
Base Address	315520
Instance Count	1

Previous Component Details

Name	ssg_self_test_config
Description	SSG Internal Test Configurations
Base Address	313792
Instance Count	1

ssg_shunt_therm

Current Component Details

Name	ssg_shunt_therm
Description	Thermistors Parameters
Base Address	314272
Instance Count	1

Previous Component Details

Name	ssg_shunt_therm
Description	Thermistors Parameters
Base Address	312544
Instance Count	1

ssg_shutdown

Current Component Details

Name	ssg_shutdown
Description	General Purpose Input Parameters
Base Address	315392
Instance Count	1

Previous Component Details

Name	ssg_shutdown
Description	General Purpose Input Parameters

Base Address	313664
Instance Count	1

ssg_temperature_short_shunt_detector

Current Component Details

Name	ssg_temperature_short_shunt_detector
Description	Temperature Based Short Shunt Detector Parameters
Base Address	314896
Instance Count	1

Previous Component Details

Name	ssg_temperature_short_shunt_detector
Description	Temperature Based Short Shunt Detector Parameters
Base Address	313168
Instance Count	1

ssg_therm_circuit

Current Component Details

Name	ssg_therm_circuit
Description	Thermistor Circuit Parameters
Base Address	314176
Instance Count	1

Previous Component Details

Name	ssg_therm_circuit
Description	Thermistor Circuit Parameters
Base Address	312448
Instance Count	1

ssg_therm_poly

Current Component Details

Name	ssg_therm_poly
Description	Polynomial Parameters
Base Address	314160

Instance Count	1
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Previous Component Details

Name	ssg_therm_poly
Description	Polynomial Parameters
Base Address	312432
Instance Count	1

ssg_therm_summary

Current Component Details

Name	ssg_therm_summary
Description	Thermistors Summary
Base Address	315040
Instance Count	1

Previous Component Details

Name	ssg_therm_summary
Description	Thermistors Summary
Base Address	313312
Instance Count	1

ssg_therms_fresh

Current Component Details

Name	ssg_therms_fresh
Description	Freshness
Base Address	315024
Instance Count	1

Previous Component Details

Name	ssg_therms_fresh
Description	Freshness
Base Address	313296
Instance Count	1

ssg_trig_afe_afe_update_stalled

Current Component Details

Name	ssg_trig_afe_afe_update_stalled
Description	Boolean Trigger
Base Address	316400
Instance Count	1

Previous Component Details

Name	ssg_trig_afe_afe_update_stalled
Description	Boolean Trigger
Base Address	314368
Instance Count	1

ssg_trig_afe_cpu_bist_update_stalled

Current Component Details

Name	ssg_trig_afe_cpu_bist_update_stalled
Description	Boolean Trigger
Base Address	316352
Instance Count	1

Previous Component Details

Name	ssg_trig_afe_cpu_bist_update_stalled
Description	Boolean Trigger
Base Address	314320
Instance Count	1

ssg_trig_afe_ram_bist_update_stalled

Current Component Details

Name	ssg_trig_afe_ram_bist_update_stalled
Description	Boolean Trigger
Base Address	316368
Instance Count	1

Previous Component Details

Name	ssg_trig_afe_ram_bist_update_stalled
Description	Boolean Trigger
Base Address	314336
Instance Count	1

ssg_trig_afe_rom_bist_update_stalled

Current Component Details

Name	ssg_trig_afe_rom_bist_update_stalled
Description	Boolean Trigger
Base Address	316384
Instance Count	1

Previous Component Details

Name	ssg_trig_afe_rom_bist_update_stalled
Description	Boolean Trigger
Base Address	314352
Instance Count	1

ssg_trig_afe_stalled

Current Component Details

Name	ssg_trig_afe_stalled
Description	Trigger Aggregate
Base Address	316432
Instance Count	1

Previous Component Details

Name	ssg_trig_afe_stalled
Description	Trigger Aggregate
Base Address	314400
Instance Count	1

ssg_trig_afe_temperature_update_stalled

Current Component Details

Name	ssg_trig_afe_temperature_update_stalled
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Description	Boolean Trigger
Base Address	316416
Instance Count	1

Previous Component Details

Name	ssg_trig_afe_temperature_update_stalled
Description	Boolean Trigger
Base Address	314384
Instance Count	1

ssg_trig_afe_thermistor_bist_update_stalled

Current Component Details

Name	ssg_trig_afe_thermistor_bist_update_stalled
Description	Boolean Trigger
Base Address	316336
Instance Count	1

Previous Component Details

Name	ssg_trig_afe_thermistor_bist_update_stalled
Description	Boolean Trigger
Base Address	314304
Instance Count	1

ssg_trig_fan_control_aggregate

Current Component Details

Name	ssg_trig_fan_control_aggregate
Description	Trigger Aggregate
Base Address	311680
Instance Count	1

Previous Component Details

Name	ssg_trig_fan_control_aggregate
Description	Trigger Aggregate
Base Address	310528

Instance Count	1
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ssg_trig_fan_control_charge

Current Component Details

Name	ssg_trig_fan_control_charge
Description	Hysteresis Trigger
Base Address	311648
Instance Count	1

Previous Component Details

Name	ssg_trig_fan_control_charge
Description	Hysteresis Trigger
Base Address	310496
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

ssg_trig_fan_control_discharge

Current Component Details

Name	ssg_trig_fan_control_discharge
Description	Hysteresis Trigger
Base Address	311664
Instance Count	1

Previous Component Details

Name	ssg_trig_fan_control_discharge
Description	Hysteresis Trigger
Base Address	310512
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

ssg_vcoil

Current Component Details

Name	ssg_vcoil
Description	SSG Contactor Coil Voltage
Base Address	314416
Instance Count	1

Previous Component Details

Name	ssg_vcoil
Description	SSG Contactor Coil Voltage
Base Address	312688
Instance Count	1

ssg_voltage_difference

Current Component Details

Name	ssg_voltage_difference
Description	Maximum Difference Of Input Values
Base Address	315088
Instance Count	1

Previous Component Details

Name	ssg_voltage_difference
Description	Maximum Difference Of Input Values
Base Address	313360
Instance Count	1

ssg_voltage_measurement_fresh

Current Component Details

Name	ssg_voltage_measurement_fresh
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Description	Freshness
Base Address	315072
Instance Count	1

Previous Component Details

Name	ssg_voltage_measurement_fresh
Description	Freshness
Base Address	313344
Instance Count	1

ssg_warn_fan_control_dc_error

Current Component Details

Name	ssg_warn_fan_control_dc_error
Description	Hysteresis Trigger
Base Address	312944
Instance Count	1

Previous Component Details

Name	ssg_warn_fan_control_dc_error
Description	Hysteresis Trigger
Base Address	311504
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

ssg_warn_hysteresis_aggregate

Current Component Details

Name	ssg_warn_hysteresis_aggregate
Description	Trigger Aggregate
Base Address	312960
Instance Count	1

Previous Component Details

Name	ssg_warn_hysteresis_aggregate
Description	Trigger Aggregate
Base Address	311520
Instance Count	1

ssg_warn_mfg_info

Current Component Details

Name	ssg_warn_mfg_info
Description	Boolean Trigger
Base Address	315632
Instance Count	1

Previous Component Details

Name	ssg_warn_mfg_info
Description	Boolean Trigger
Base Address	313904
Instance Count	1

stack_balancing_selector

Current Component Details

Name	stack_balancing_selector
Description	Stack Balancing Selector
Base Address	314032
Instance Count	1

Previous Component Details

Name	stack_balancing_selector
Description	Stack Balancing Selector
Base Address	312304
Instance Count	1

stack_balancing_throttling_estimator

Current Component Details

Name	stack_balancing_throttling_estimator
Description	Stack Balancing Throttling Estimator
Base Address	313828
Instance Count	1

Previous Component Details

Name	stack_balancing_throttling_estimator
Description	Stack Balancing Throttling Estimator
Base Address	312100
Instance Count	1

stack_cell_balancing_throttling_fresh

Current Component Details

Name	stack_cell_balancing_throttling_fresh
Description	Freshness
Base Address	313844
Instance Count	1

Previous Component Details

Name	stack_cell_balancing_throttling_fresh
Description	Freshness
Base Address	312116
Instance Count	1

stack_cell_imbalance_stat

Current Component Details

Name	stack_cell_imbalance_stat
Description	Statistics
Base Address	311760
Instance Count	1

Previous Component Details

Name	stack_cell_imbalance_stat
Description	Statistics

Base Address	310608
Instance Count	1

stack_cell_model_estimator

Current Component Details

Name	stack_cell_model_estimator
Description	Stack Cell Model Estimator
Base Address	282352
Instance Count	1

Previous Component Details

Name	stack_cell_model_estimator
Description	Short Shunt Detector Parameters
Base Address	282352
Instance Count	1

stack_cell_soc_distribution_fresh

Current Component Details

Name	stack_cell_soc_distribution_fresh
Description	Freshness
Base Address	311712
Instance Count	1

Previous Component Details

Name	stack_cell_soc_distribution_fresh
Description	Freshness
Base Address	310560
Instance Count	1

stack_cell_soh

Current Component Details

Name	stack_cell_soh
Description	Cell State Of Health Parameters
Base Address	267232

Instance Count	768
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Previous Component Details

Name	stack_cell_soh
Description	Cell State Of Health Parameters
Base Address	267232
Instance Count	480

stack_ci_therm_summary

Current Component Details

Name	stack_ci_therm_summary
Description	Maximum Difference Of Input Values
Base Address	286720
Instance Count	32

Previous Component Details

Name	stack_ci_therm_summary
Description	Maximum Difference Of Input Values
Base Address	286720
Instance Count	20

stack_contactor

Added Registers

Name	Description	Storage Type	Type	Units
software_feedback_value	Reflects actual output value as written by firmware	Volatile	Boolean	Flag

Removed Registers

Name	Description	Storage Type	Type	Units
coil_error	Whether the contactor coil has an error	Volatile	Boolean	Flag

stack_contactor_summary

Current Component Details

Name	stack_contactor_summary
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Description	Contactor Summary
Base Address	314400
Instance Count	1

Previous Component Details

Name	stack_contactor_summary
Description	Contactor Summary
Base Address	312672
Instance Count	1

stack_control

Added Registers

Name	Description	Storage Type	Type	Units
contactor_closing_delay	Delay after contactor closes (min 0.250s), before another contactor may close	Factory	Microseconds	uS
last_precharge_connect_time	Last time the precharge was connected	Volatile	Microseconds	uS
precharge_cooldown_delay	Delay before being able to re-connect contactors	Factory	Microseconds	uS
precharge_latch_count	Number of times precharge voltage satisfies the configured voltage difference criterion	Volatile	Count	Number
precharge_latch_count_thresh	Max number of times precharge latched to complete precharge	Factory	Count	Number

Removed Registers

Name	Description	Storage Type	Type	Units
disable_precharge	Disables precharge state, always 0	Factory	Boolean	Flag
precharge_current	Pre-charging current magnitude, zero unless pre-charge contactor is closed	Volatile	Current	mA
precharge_delay	Delay before pre-charge terminates (min 1s, max 10s)	Factory	Microseconds	uS
precharge_error	Error occurred during operation.(1 = No measurement taken,2 = Precharge current above precharge_max_current3 = Voltage difference above voltage_mismatch_thresh)	Volatile	UInt8	Value
precharge_max_current	Maximum current below which pre-charge can be terminated	Factory	Current	mA

stack_fault_cell_hi

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_fault_cell_lo

Current Component Details

Name	stack_fault_cell_lo
Description	Hysteresis Trigger
Base Address	140316
Instance Count	1

Previous Component Details

Name	stack_fault_cell_lo
Description	Hysteresis Trigger
Base Address	140311
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_fault_charge_current_hi

Current Component Details

Name	stack_fault_charge_current_hi
Description	Hysteresis Trigger
Base Address	148508
Instance Count	1

Previous Component Details

Name	stack_fault_charge_current_hi
Description	Hysteresis Trigger

Base Address	148503
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

stack_fault_charge_therm_hi

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

stack_fault_charge_therm_lo

Current Component Details

Name	stack_fault_charge_therm_lo
Description	Hysteresis Trigger
Base Address	103964
Instance Count	1

Previous Component Details

Name	stack_fault_charge_therm_lo
Description	Hysteresis Trigger
Base Address	103959
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

stack_fault_contactor_feedback_fail

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_fault_discharge_current_hi

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_fault_discharge_therm_hi

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_fault_discharge_therm_lo

Current Component Details

Name	stack_fault_discharge_therm_lo
Description	Hysteresis Trigger
Base Address	141596
Instance Count	1

Previous Component Details

Name	stack_fault_discharge_therm_lo
Description	Hysteresis Trigger
Base Address	141591
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_fault_precharge_timeout

Current Component Details

Name	stack_fault_precharge_timeout
Description	Hysteresis Trigger
Base Address	315984
Instance Count	1

Previous Component Details

Name	stack_fault_precharge_timeout
Description	Hysteresis Trigger
Base Address	301440
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

Changed Registers

Current Register Details

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Configuration	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Configuration	Microseconds	uS
latched	True if the component should latch in the tripped state until manually cleared	Configuration	Boolean	Flag
thresh	Trigger threshold	Configuration	Microseconds	uS
time_hyst	Trigger time hysteresis	Configuration	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	Microseconds	uS

Previous Register Details

Name	Description	Storage Type	Type	Units
disabled	True if the trigger is disabled, it will remain in an untripped state	Factory	Boolean	Flag
end_time_hyst	Trigger end time hysteresis	Factory	Microseconds	uS
latched	True if the component should latch in the tripped state until manually cleared	Factory	Boolean	Flag
thresh	Trigger threshold	Factory	UInt8	Value
time_hyst	Trigger time hysteresis	Factory	Microseconds	uS
triggering_value	Value that caused the triggered state to change to true	Volatile	UInt8	Value

stack_fault_voltage_hi

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_fault_voltage_lo

Current Component Details

Name	stack_fault_voltage_lo
Description	Hysteresis Trigger
Base Address	149788
Instance Count	1

Previous Component Details

Name	stack_fault_voltage_lo
Description	Hysteresis Trigger
Base Address	149783
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_fault_voltage_over

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_fault_voltage_sum

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_fault_voltage_under

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_imbalance_estimator

Current Component Details

Name	stack_imbalance_estimator
Description	Stack Imbalance Estimator
Base Address	311696
Instance Count	1

Previous Component Details

Name	stack_imbalance_estimator
Description	Stack Imbalance Estimator
Base Address	310544
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
enable_estimation	Enable imbalance estimation	Volatile	Boolean	Flag
estimation_current_hysteresis	Minimum period over which the current must fall below estimation_current_window for imbalance estimation to occur	Configuration	Microseconds	uS
imbalance_estimation_uncertainty	Metric used to qualify the average uncertainty associated with the imbalance estimates	Persistent	Float	Value
maximum_imbalance	Maximum amount of charge imbalance, within the estimation window, that can be removed by balancing	Configuration	Charge	mAh
reset_imbalances	Reset imbalances for all cells	Volatile	Boolean	Flag
soc_estimation_window_lower	Lower threshold for the SOC window, within which imbalance estimation can occur	Configuration	Percentage	%
soc_estimation_window_upper	Upper threshold for the SOC window, within which imbalance estimation can occur	Configuration	Percentage	%
voltage_estimation_window_lower	Lower threshold for the voltage window, within which imbalance estimation can occur	Configuration	Voltage	mV
voltage_estimation_window_upper	Upper threshold for the voltage window, within which imbalance estimation can occur	Configuration	Voltage	mV

Removed Registers

Name	Description	Storage Type	Type	Units
imbalance_estimation_uncertainty	Metric used to qualify the average uncertainty associated with the imbalance estimates	Persistent	Float	Value
lower_estimation_soc_window	Lower SOC window, from a specific SOC point to empty, where the imbalance estimation can occur	Configuration	Percentage	%
lower_estimation_voltage_window	Lower voltage threshold, below which imbalance estimation can occur	Configuration	Voltage	mV
maximum_bottom_imbalance	Maximum amount of charge imbalance, within the lower estimation window, that can be removed by balancing	Configuration	Charge	mAh
maximum_top_imbalance	Maximum amount of charge imbalance, within the upper estimation window, that can be removed by balancing	Configuration	Charge	mAh
upper_estimation_soc_window	Upper SOC window, from a specific SOC point to full, where the imbalance estimation can occur	Configuration	Percentage	%
upper_estimation_voltage_window	Upper voltage threshold, above which imbalance estimation can occur	Configuration	Voltage	mV

stack_power

Added Registers

Name	Description	Storage Type	Type	Units
current_offset	Current offset adjustment	Configuration	Current	mA
current_offset_limit	Current offset adjustment limit	Factory	Current	mA

stack_soc

Added Registers

Name	Description	Storage Type	Type	Units
charge_available	Amount of charge available before empty condition	Volatile	Charge	mAh
stack_empty	Flag indicating the stack is empty	Volatile	Boolean	Flag
stack_full	Flag indicating the stack is full	Volatile	Boolean	Flag
stack_last_empty_microseconds	Timestamp in microseconds, indicating the last time the stack was empty	Volatile	Microseconds	uS
stack_last_full_microseconds	Timestamp in microseconds, indicating the last time the stack was full	Volatile	Microseconds	uS

stack_soc_balancer

Current Component Details

Name	stack_soc_balancer
Description	Stack Soc Based Balancing Algorithm
Base Address	314048
Instance Count	1

Previous Component Details

Name	stack_soc_balancer
Description	Stack Soc Based Balancing Algorithm
Base Address	312320
Instance Count	1

stack_soc_interval_width_stat

Current Component Details

Name	stack_soc_interval_width_stat
Description	Statistics
Base Address	311744

Instance Count	1
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Previous Component Details

Name	stack_soc_interval_width_stat
Description	Statistics
Base Address	310592
Instance Count	1

stack_soc_mean_stat

Current Component Details

Name	stack_soc_mean_stat
Description	Statistics
Base Address	311728
Instance Count	1

Previous Component Details

Name	stack_soc_mean_stat
Description	Statistics
Base Address	310576
Instance Count	1

stack_therm_poly

Current Component Details

Name	stack_therm_poly
Description	Polynomial Parameters
Base Address	17920
Instance Count	4

Previous Component Details

Name	stack_therm_poly
Description	Polynomial Parameters
Base Address	18176
Instance Count	2

stack_trig_cell_hi

Current Component Details

Name	stack_trig_cell_hi
Description	Hysteresis Trigger
Base Address	140280
Instance Count	1

Previous Component Details

Name	stack_trig_cell_hi
Description	Hysteresis Trigger
Base Address	140278
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_trig_cell_lo

Current Component Details

Name	stack_trig_cell_lo
Description	Hysteresis Trigger
Base Address	140292
Instance Count	1

Previous Component Details

Name	stack_trig_cell_lo
Description	Hysteresis Trigger
Base Address	140289
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_trig_charge_current_hi

Current Component Details

Name	stack_trig_charge_current_hi
Description	Hysteresis Trigger
Base Address	148484
Instance Count	1

Previous Component Details

Name	stack_trig_charge_current_hi
Description	Hysteresis Trigger
Base Address	148481
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_trig_charge_therm_hi

Current Component Details

Name	stack_trig_charge_therm_hi
Description	Hysteresis Trigger
Base Address	103928
Instance Count	1

Previous Component Details

Name	stack_trig_charge_therm_hi
Description	Hysteresis Trigger
Base Address	103926
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_trig_charge_therm_lo

Current Component Details

Name	stack_trig_charge_therm_lo
Description	Hysteresis Trigger
Base Address	103940
Instance Count	1

Previous Component Details

Name	stack_trig_charge_therm_lo
Description	Hysteresis Trigger
Base Address	103937
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_trig_discharge_current_hi

Current Component Details

Name	stack_trig_discharge_current_hi
Description	Hysteresis Trigger
Base Address	148472
Instance Count	1

Previous Component Details

Name	stack_trig_discharge_current_hi
Description	Hysteresis Trigger

Base Address	148470
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_trig_discharge_therm_hi

Current Component Details

Name	stack_trig_discharge_therm_hi
Description	Hysteresis Trigger
Base Address	141560
Instance Count	1

Previous Component Details

Name	stack_trig_discharge_therm_hi
Description	Hysteresis Trigger
Base Address	141558
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_trig_discharge_therm_lo

Current Component Details

Name	stack_trig_discharge_therm_lo
Description	Hysteresis Trigger
Base Address	141572
Instance Count	1

Previous Component Details

Name	stack_trig_discharge_therm_lo
Description	Hysteresis Trigger
Base Address	141569
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_trig_uvlo_cell_voltage

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_trig_uvlo_stack_voltage

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_trig_voltage_hi

Current Component Details

Name	stack_trig_voltage_hi
Description	Hysteresis Trigger
Base Address	149752
Instance Count	1

Previous Component Details

Name	stack_trig_voltage_hi
Description	Hysteresis Trigger
Base Address	149750

Instance Count	1
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Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_trig_voltage_lo

Current Component Details

Name	stack_trig_voltage_lo
Description	Hysteresis Trigger
Base Address	149764
Instance Count	1

Previous Component Details

Name	stack_trig_voltage_lo
Description	Hysteresis Trigger
Base Address	149761
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_warn_cell_hi

Current Component Details

Name	stack_warn_cell_hi
Description	Hysteresis Trigger
Base Address	140268
Instance Count	1

Previous Component Details

Name	stack_warn_cell_hi
Description	Hysteresis Trigger
Base Address	140267
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_warn_cell_lo

Current Component Details

Name	stack_warn_cell_lo
Description	Hysteresis Trigger
Base Address	140304
Instance Count	1

Previous Component Details

Name	stack_warn_cell_lo
Description	Hysteresis Trigger
Base Address	140300
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_warn_charge_current_hi

Current Component Details

Name	stack_warn_charge_current_hi
Description	Hysteresis Trigger
Base Address	148496
Instance Count	1

Previous Component Details

Name	stack_warn_charge_current_hi
Description	Hysteresis Trigger
Base Address	148492
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_warn_charge_therm_hi

Current Component Details

Name	stack_warn_charge_therm_hi
Description	Hysteresis Trigger
Base Address	103916
Instance Count	1

Previous Component Details

Name	stack_warn_charge_therm_hi
Description	Hysteresis Trigger
Base Address	103915
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_warn_charge_therm_lo

Current Component Details

Name	stack_warn_charge_therm_lo
Description	Hysteresis Trigger

Base Address	103952
Instance Count	1

Previous Component Details

Name	stack_warn_charge_therm_lo
Description	Hysteresis Trigger
Base Address	103948
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

stack_warn_discharge_current_hi

Current Component Details

Name	stack_warn_discharge_current_hi
Description	Hysteresis Trigger
Base Address	148460
Instance Count	1

Previous Component Details

Name	stack_warn_discharge_current_hi
Description	Hysteresis Trigger
Base Address	148459
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events correspondingto the specified threshold(s)	Volatile	Count	Number

stack_warn_discharge_therm_hi

Current Component Details

Name	stack_warn_discharge_therm_hi
Description	Hysteresis Trigger
Base Address	141548
Instance Count	1

Previous Component Details

Name	stack_warn_discharge_therm_hi
Description	Hysteresis Trigger
Base Address	141547
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_warn_discharge_therm_lo

Current Component Details

Name	stack_warn_discharge_therm_lo
Description	Hysteresis Trigger
Base Address	141584
Instance Count	1

Previous Component Details

Name	stack_warn_discharge_therm_lo
Description	Hysteresis Trigger
Base Address	141580
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_warn_voltage_hi

Current Component Details

Name	stack_warn_voltage_hi
Description	Hysteresis Trigger
Base Address	149740
Instance Count	1

Previous Component Details

Name	stack_warn_voltage_hi
Description	Hysteresis Trigger
Base Address	149739
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

stack_warn_voltage_lo

Current Component Details

Name	stack_warn_voltage_lo
Description	Hysteresis Trigger
Base Address	149776
Instance Count	1

Previous Component Details

Name	stack_warn_voltage_lo
Description	Hysteresis Trigger
Base Address	149772
Instance Count	1

Added Registers

Name	Description	Storage Type	Type	Units
threshold_event_count	Indicates the total number of data source events corresponding to the specified threshold(s)	Volatile	Count	Number

therm

Current Component Details

Name	therm
Description	Thermistors Parameters
Base Address	14336
Instance Count	256

Previous Component Details

Name	therm
Description	Thermistors Parameters
Base Address	14336
Instance Count	160

3.6. Trigger Bitfield Changes

The following tables show the register changes introduced in Faraday Update 2 Release Candidate 1 from Faraday Update 1.

Table 20. Fault Bitfield Mapping

Bitfield Component	Instance	Bit	Mapped Component
sc_bitfield_fault_triggered	0	0	ssg_fault_afe_math_overflow
sc_bitfield_fault_triggered	0	1	ssg_fault_afe_config_mismatch
sc_bitfield_fault_triggered	0	2	ssg_fault_afe_reset
sc_bitfield_fault_triggered	0	3	ssg_fault_afe_thermistor_bist
sc_bitfield_fault_triggered	0	4	ssg_fault_currents_mismatch
sc_bitfield_fault_triggered	0	5	ssg_fault_vcoil_voltage_over
sc_bitfield_fault_triggered	0	6	ssg_fault_vcoil_voltage_range
sc_bitfield_fault_triggered	0	7	ssg_fault_vcoil_state_mismatch
sc_bitfield_fault_triggered	0	8	ssg_fault_unexpected_bus_voltage
sc_bitfield_fault_triggered	0	9	ssg_fault_temperature_short_shunt
sc_bitfield_fault_triggered	0	10	sc_fault_controller_wdt
sc_bitfield_fault_triggered	0	11	sc_fault_ci_auth
sc_bitfield_fault_triggered	0	12	stack_fault_precharge_timeout
sc_bitfield_fault_triggered	0	13	ssg_fault_precharge_over_1s_power
sc_bitfield_fault_triggered	0	14	ssg_fault_precharge_over_5s_power
sc_bitfield_fault_triggered	0	15	ssg_fault_precharge_over_10s_power
sc_bitfield_fault_triggered	0	16	ssg_fault_precharge_continuous_power
sc_bitfield_fault_triggered	0	17	stack_fault_contactor_feedback_fail
sc_bitfield_fault_triggered	0	18	sc_fault_ci_internal_temp_over
sc_bitfield_fault_triggered	0	19	stack_fault_cell_hi
sc_bitfield_fault_triggered	0	20	stack_fault_cell_lo
sc_bitfield_fault_triggered	0	21	stack_fault_voltage_hi
sc_bitfield_fault_triggered	0	22	stack_fault_voltage_lo
sc_bitfield_fault_triggered	0	23	stack_fault_discharge_current_hi
sc_bitfield_fault_triggered	0	24	stack_fault_charge_current_hi
sc_bitfield_fault_triggered	0	25	stack_fault_discharge_therm_hi
sc_bitfield_fault_triggered	0	26	stack_fault_discharge_therm_lo
sc_bitfield_fault_triggered	0	27	stack_fault_charge_therm_hi
sc_bitfield_fault_triggered	0	28	stack_fault_charge_therm_lo
sc_bitfield_fault_triggered	0	29	ssg_fault_cpu_register_self_test_wdt
sc_bitfield_fault_triggered	0	30	ssg_fault_clock_accuracy_test_wdt
sc_bitfield_fault_triggered	0	31	ssg_fault_afe_aggregate

Bitfield Component	Instance	Bit	Mapped Component
sc_bitfield_fault_triggered	0	32	ssg_fault_afe_rom_bist_fresh_wdt
sc_bitfield_fault_triggered	0	33	ssg_fault_afe_ram_bist_fresh_wdt
sc_bitfield_fault_triggered	0	34	ssg_fault_afe_cpu_bist_fresh_wdt
sc_bitfield_fault_triggered	0	35	ssg_fault_afe_thermistor_bist_fresh_wdt
sc_bitfield_fault_triggered	0	36	ssg_fault_afe_adc_register_bist
sc_bitfield_fault_triggered	0	37	ssg_fault_afe_spi_cs_bist
sc_bitfield_fault_triggered	0	38	ssg_fault_afe_spi_data_bist
sc_bitfield_fault_triggered	0	39	ssg_fault_power_conn_temp_over
sc_bitfield_fault_triggered	0	40	ssg_fault_therms_wdt
sc_bitfield_fault_triggered	0	41	ssg_fault_power_conn_temp_consistency
sc_bitfield_fault_triggered	0	42	ssg_fault_therm_circuit_fail
sc_bitfield_fault_triggered	0	43	ssg_fault_ambient_therm_fail
sc_bitfield_fault_triggered	0	44	sc_fault_ci
sc_bitfield_fault_triggered	0	45	stack_fault_cell_wdt
sc_bitfield_fault_triggered	0	46	stack_fault_therm_wdt
sc_bitfield_fault_triggered	0	47	stack_fault_ci_wdt
sc_bitfield_fault_triggered	0	48	stack_fault_ci_auth_wdt
sc_bitfield_fault_triggered	0	49	sc_fault_ci_therm_mux_fail_wdt
sc_bitfield_fault_triggered	0	50	stack_fault_open_wire_wdt
sc_bitfield_fault_triggered	0	51	stack_fault_power_wdt
sc_bitfield_fault_triggered	0	52	sc_fault_ram_test_wdt
sc_bitfield_fault_triggered	0	53	sc_fault_rom_test_wdt
sc_bitfield_fault_triggered	0	54	sc_fault_factory_verify_wdt
sc_bitfield_fault_triggered	0	55	ssg_fault_contactor_life_verify_wdt
sc_bitfield_fault_triggered	0	56	sc_fault_register_link
sc_bitfield_fault_triggered	0	57	stack_fault_cell_open_wire
sc_bitfield_fault_triggered	0	58	stack_fault_therm_circuit_fail
sc_bitfield_fault_triggered	0	59	stack_fault_aux_therm_group_1_circuit_fail
sc_bitfield_fault_triggered	0	60	stack_fault_aux_therm_group_2_circuit_fail
sc_bitfield_fault_triggered	0	61	stack_fault_aux_therm_group_3_circuit_fail
sc_bitfield_fault_triggered	0	62	sc_fault_ci_therm_mux_fail
sc_bitfield_fault_triggered	1	0	sc_fault_config_factory
sc_bitfield_fault_triggered	1	1	sc_fault_config_factory_verify
sc_bitfield_fault_triggered	1	2	ssg_fault_config_contactor_life
sc_bitfield_fault_triggered	1	3	ssg_fault_config_contactor_life_verify

Bitfield Component	Instance	Bit	Mapped Component
sc_bitfield_fault_triggered	1	4	ssg_fault_contactor_life_sanity_check
sc_bitfield_fault_triggered	1	5	stack_fault_voltage_sum
sc_bitfield_fault_triggered	1	6	stack_fault_ci_therm_consistency
sc_bitfield_fault_triggered	1	7	stack_fault_aux_therm_group_1_consistency
sc_bitfield_fault_triggered	1	8	stack_fault_aux_therm_group_2_consistency
sc_bitfield_fault_triggered	1	9	stack_fault_aux_therm_group_3_consistency
sc_bitfield_fault_triggered	1	10	ssg_fault_contactor_end_of_life
sc_bitfield_fault_triggered	1	11	ssg_fault_charge_current_over
sc_bitfield_fault_triggered	1	12	ssg_fault_charge_current_hi
sc_bitfield_fault_triggered	1	13	ssg_fault_discharge_current_hi
sc_bitfield_fault_triggered	1	14	ssg_fault_discharge_current_over
sc_bitfield_fault_triggered	1	15	ssg_fault_voltage_over
sc_bitfield_fault_triggered	1	16	stack_fault_cell_over
sc_bitfield_fault_triggered	1	17	stack_fault_cell_under
sc_bitfield_fault_triggered	1	18	stack_fault_discharge_current_over
sc_bitfield_fault_triggered	1	19	stack_fault_charge_current_over
sc_bitfield_fault_triggered	1	20	ssg_fault_bus_discharge_current_over
sc_bitfield_fault_triggered	1	21	ssg_fault_bus_charge_current_over
sc_bitfield_fault_triggered	1	22	stack_fault_voltage_over
sc_bitfield_fault_triggered	1	23	stack_fault_voltage_under
sc_bitfield_fault_triggered	1	24	stack_fault_charge_therm_over
sc_bitfield_fault_triggered	1	25	stack_fault_charge_therm_under
sc_bitfield_fault_triggered	1	26	stack_fault_discharge_therm_over
sc_bitfield_fault_triggered	1	27	stack_fault_discharge_therm_under
sc_bitfield_fault_triggered	1	28	ssg_fault_precharge_internal
sc_bitfield_fault_triggered	1	29	ssg_fault_temperature_short_shunt_fresh_wdt
sc_bitfield_fault_triggered	1	30	stack_fault_aux_therm_group_1_over
sc_bitfield_fault_triggered	1	31	stack_fault_aux_therm_group_1_under
sc_bitfield_fault_triggered	1	32	stack_fault_aux_therm_group_2_over
sc_bitfield_fault_triggered	1	33	stack_fault_aux_therm_group_2_under
sc_bitfield_fault_triggered	1	34	stack_fault_aux_therm_group_3_over
sc_bitfield_fault_triggered	1	35	stack_fault_aux_therm_group_3_under
sc_bitfield_fault_triggered	1	36	ssg_fault_monotonic_clock_wdt
sc_bitfield_fault_triggered	1	37	ssg_fault_rtc_clock_wdt

Bitfield Component	Instance	Bit	Mapped Component
sc_bitfield_fault_triggered	1	38	ssg_fault_gpi_0
sc_bitfield_fault_triggered	1	39	ssg_fault_gpi_1
sc_bitfield_fault_triggered	1	40	ssg_fault_uvlo_mismatch
sc_bitfield_fault_triggered	1	41	stack_fault_aux_therm_group_1_hi
sc_bitfield_fault_triggered	1	42	stack_fault_aux_therm_group_1_lo
sc_bitfield_fault_triggered	1	43	stack_fault_aux_therm_group_2_hi
sc_bitfield_fault_triggered	1	44	stack_fault_aux_therm_group_2_lo
sc_bitfield_fault_triggered	1	45	stack_fault_aux_therm_group_3_hi
sc_bitfield_fault_triggered	1	46	stack_fault_aux_therm_group_3_lo
sc_bitfield_fault_triggered	1	47	ssg_fault_hysteresis_aggregate
sc_bitfield_fault_triggered	1	48	sc_fault_comm_hysteresis_aggregate
sc_bitfield_fault_triggered	1	49	sc_fault_batt_hysteresis_aggregate
sc_bitfield_fault_triggered	1	50	sc_fault_config
sc_bitfield_fault_triggered	1	51	stack_fault_combined_therm_hi
sc_bitfield_fault_triggered	1	52	stack_fault_combined_therm_lo
sc_bitfield_fault_triggered	1	53	stack_fault_combined_voltage_hi
sc_bitfield_fault_triggered	1	54	stack_fault_combined_voltage_lo

Table 21. Warning Bitfield Mapping

Bitfield Component	Instance	Bit	Mapped Component
sc_bitfield_warning_triggered	0	0	ssg_warn_fan_control_dc_error
sc_bitfield_warning_triggered	0	1	sc_warn_controller_wdt
sc_bitfield_warning_triggered	0	2	stack_warn_precharge_timeout
sc_bitfield_warning_triggered	0	3	stack_warn_discharge_therm_hi
sc_bitfield_warning_triggered	0	4	stack_warn_discharge_therm_lo
sc_bitfield_warning_triggered	0	5	stack_warn_charge_therm_hi
sc_bitfield_warning_triggered	0	6	stack_warn_charge_therm_lo
sc_bitfield_warning_triggered	0	7	stack_warn_cell_hi
sc_bitfield_warning_triggered	0	8	stack_warn_cell_lo
sc_bitfield_warning_triggered	0	9	stack_warn_voltage_hi
sc_bitfield_warning_triggered	0	10	stack_warn_voltage_lo
sc_bitfield_warning_triggered	0	11	stack_warn_discharge_current_hi
sc_bitfield_warning_triggered	0	12	stack_warn_charge_current_hi
sc_bitfield_warning_triggered	0	13	stack_warn_cell_open_wire
sc_bitfield_warning_triggered	0	14	ssg_warn_contactor_end_of_life
sc_bitfield_warning_triggered	0	15	sc_warn_factory_backup_error
sc_bitfield_warning_triggered	0	16	sc_warn_bms_backup_error
sc_bitfield_warning_triggered	0	17	sc_warn_network_backup_error

Bitfield Component	Instance	Bit	Mapped Component
sc_bitfield_warning_triggered	0	18	ssg_warn_mfg_info
sc_bitfield_warning_triggered	0	19	ssg_warn_gpi_0
sc_bitfield_warning_triggered	0	20	ssg_warn_gpi_1
sc_bitfield_warning_triggered	0	21	sc_warn_ci_mfg_info_read
sc_bitfield_warning_triggered	0	22	ssg_warn_24v_rail_voltage_hi
sc_bitfield_warning_triggered	0	23	ssg_warn_24v_rail_voltage_lo
sc_bitfield_warning_triggered	0	24	ssg_warn_factory_restore_img_corrupted
sc_bitfield_warning_triggered	0	25	ssg_warn_uvlo_mismatch
sc_bitfield_warning_triggered	0	26	stack_warn_soc_uncalibrated
sc_bitfield_warning_triggered	0	27	stack_warn_low_capacity
sc_bitfield_warning_triggered	0	28	stack_warn_aux_therm_group_1_hi
sc_bitfield_warning_triggered	0	29	stack_warn_aux_therm_group_1_lo
sc_bitfield_warning_triggered	0	30	stack_warn_aux_therm_group_2_hi
sc_bitfield_warning_triggered	0	31	stack_warn_aux_therm_group_2_lo
sc_bitfield_warning_triggered	0	32	stack_warn_aux_therm_group_3_hi
sc_bitfield_warning_triggered	0	33	stack_warn_aux_therm_group_3_lo
sc_bitfield_warning_triggered	0	34	ssg_warn_hysteresis_aggregate
sc_bitfield_warning_triggered	0	35	sc_warn_hysteresis_aggregate
sc_bitfield_warning_triggered	0	36	stack_warn_therm_hi
sc_bitfield_warning_triggered	0	37	stack_warn_therm_lo
sc_bitfield_warning_triggered	0	38	stack_warn_voltage_combined_hi
sc_bitfield_warning_triggered	0	39	stack_warn_voltage_combined_lo
sc_bitfield_warning_triggered	0	40	ssg_warn_24v_rail_voltage_combined

Table 22. User Trigger Bitfield Mapping

Bitfield Component	Instance	Bit	Mapped Component
sc_bitfield_user_trig_triggered	0	0	ssg_trig_fan_control_charge
sc_bitfield_user_trig_triggered	0	1	ssg_trig_fan_control_discharge
sc_bitfield_user_trig_triggered	0	2	stack_trig_cell_hi
sc_bitfield_user_trig_triggered	0	3	stack_trig_cell_lo
sc_bitfield_user_trig_triggered	0	4	stack_trig_voltage_hi
sc_bitfield_user_trig_triggered	0	5	stack_trig_voltage_lo
sc_bitfield_user_trig_triggered	0	6	stack_trig_discharge_current_hi
sc_bitfield_user_trig_triggered	0	7	stack_trig_charge_current_hi
sc_bitfield_user_trig_triggered	0	8	stack_trig_aux_therm_group_1_hi
sc_bitfield_user_trig_triggered	0	9	stack_trig_aux_therm_group_1_lo
sc_bitfield_user_trig_triggered	0	10	stack_trig_aux_therm_group_2_hi

Bitfield Component	Instance	Bit	Mapped Component
sc_bitfield_user_trig_triggered	0	11	stack_trig_aux_therm_group_2_lo
sc_bitfield_user_trig_triggered	0	12	stack_trig_aux_therm_group_3_hi
sc_bitfield_user_trig_triggered	0	13	stack_trig_aux_therm_group_3_lo
sc_bitfield_user_trig_triggered	0	14	ssg_trig_fan_control_aggregate
sc_bitfield_user_trig_triggered	0	15	stack_trig_uvlo_combined
sc_bitfield_user_trig_triggered	0	16	stack_trig_therm_hi
sc_bitfield_user_trig_triggered	0	17	stack_trig_therm_lo
sc_bitfield_user_trig_triggered	0	18	ssg_trig_afe_stalled
sc_bitfield_user_trig_triggered	0	19	stack_trig_uvlo_cell_voltage
sc_bitfield_user_trig_triggered	0	20	stack_trig_uvlo_stack_voltage
sc_bitfield_user_trig_triggered	0	21	stack_trig_discharge_therm_hi
sc_bitfield_user_trig_triggered	0	22	stack_trig_charge_therm_hi
sc_bitfield_user_trig_triggered	0	23	stack_trig_discharge_therm_lo
sc_bitfield_user_trig_triggered	0	24	stack_trig_charge_therm_lo
sc_bitfield_user_trig_triggered	0	25	ssg_trig_afe_thermistor_bist_update_stalled
sc_bitfield_user_trig_triggered	0	26	ssg_trig_afe_cpu_bist_update_stalled
sc_bitfield_user_trig_triggered	0	27	ssg_trig_afe_ram_bist_update_stalled
sc_bitfield_user_trig_triggered	0	28	ssg_trig_afe_rom_bist_update_stalled
sc_bitfield_user_trig_triggered	0	29	ssg_trig_afe_afe_update_stalled
sc_bitfield_user_trig_triggered	0	30	ssg_trig_afe_temperature_update_stalled

From time to time Nuvation Energy will make updates to products in response to changes in available technologies, client requests, emerging energy storage standards, and other industry requirements. The product specifications in this document, therefore, are subject to change without notice.

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