UCD9112 Device Errata

The UCD9112 device has the following anomalies.

Errata Index

1. The WRITE_PROTECT command does not prevent writing to other PMBus commands as per the specification.
2. VOUT_MAX warning bit in STATUS_VOUT register is not set.
3. Soft start (or stop) timing might get affected during faults.
4. System does not do proper number of retries for fault response of continue operation for 0 ms.
5. System startup issues when VIN_OFF limit is higher than VIN_ON limit.
6. Address 12 should not be assigned as PMBus address.
7. The PMBus GROUP command is not supported.

Erratum # 1

The WRITE_PROTECT command does not prevent writing to other PMBus commands, as per the specification.

Detailed Description of Issue

When the WRITE_PROTECT command has a non-zero value, it does not properly prevent writing to all PMBus commands (excluding WRITE_PROTECT, OPERATION, ON_OFF_CONFIG, and VOUT_COMMAND PMBus commands) that it should. This allows a PMBus master to write to these other commands, even when WRITE_PROTECT value is not equal to 0.

Suggested workarounds
The Configuration Security feature will allow protection of all commands on a command by command basis. For more information see the application report *Configuration Security for UCD91xx Digital Controllers* (SLUA428).

Erratum # 2

VOUT_MAX warning bit in STATUS_VOUT register is not set.

Detailed Description of Issue

When the Vout set point is configured to be greater than VOUT_MAX value, the appropriate bit in the STATUS_VOUT register is not set.

Suggested workarounds
Do not set Vout set point (or VOUT_COMMAND) greater than the allowed voltage in VOUT_MAX register and expect the status bit to be asserted.

Erratum # 3

Soft start (or stop) timings might get affected during faults.

Detailed Description of Issue
During a fault, the system might not achieve proper soft-start or soft-stop timing if a fault happens during the ramp up or ramp down process. The timing of the ramp will typically be higher than configured.

Suggested workarounds
No workaround as of now.

Erratum # 4

System does not do proper number of retries for fault response of continue operation for 0 ms.

Detailed Description of Issue
When VOUT_OV_FAULT_RESPONSE is set to continue operation for 0 ms and a non-zero number of retries, the system will not attempt to retry the proper number of times. It is typically less than the configured number of retries.

Suggested workarounds
No workaround as of now.

Erratum # 5

System startup issues when VIN_OFF limit is higher than VIN_ON limit.

Detailed Description of Issue
The UCD9112 allows users to configure VIN_OFF limit higher than VIN_ON (VIN_OFF > VIN_ON). The PMBus peripheral will not NACK this transaction. If the system attempts to start up with this configuration set, the power supply will not operate properly until input voltage Vin is higher than VIN_OFF limit.

Suggested workarounds
This is a misconfiguration from a user side. The user needs to set the VIN_ON limit higher than the VIN_OFF limit.

Erratum # 6

Address 12 should not be assigned as PMBus address.

Detailed Description of Issue
When the UCD9112 is discovering its PMBus address by sampling ADDR0 and ADDR1 on startup, it incorrectly allows address 12 to be discovered. This is the SMBus Alert Response address and should not be used as a PMBus slave.

Suggested workarounds
To work around this issue, do not resistor-program ADDR0 and ADDR1 to allow an address of 12 to be assigned as a PMBus address for the device.

Erratum # 7

The PMBus GROUP command is not supported.

Detailed Description of Issue
The PMBus GROUP command is not supported.

Suggested workarounds
No workaround as of now.

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