5. VORTEXs System

5.1 System Overview

Voltage Oscillation Reporting To EXternal Systems (VORTEXs) is a subsystem of the SP250Ψ which allows engineers and field technicians to retrieve error codes from other SP250Ψ subsystems without specialized training or equipment. Error codes generated by the VORTEXs system are numerical codes represented by voltage fluctuations on a dedicated test point. Error codes and their corresponding definitions can be found in a table at the end of this section. Because the VORTEXs system is integrated with the SP250Ψ flow control block, the carrier subsystem can not directly access error codes generated from VORTEXs. Please take this into account when designing debug tools for the SP250Ψ.

5.2 Reading an Error Code

Error codes are reported as nearest whole integer voltages on the dedicated VORTEXs test point, referenced to GND. A voltmeter or digital multimeter set to the appropriate DC voltage scale is all that is required to retrieve an error code. With the ground probe contacting any of the SP250Ψ GND pins probe the VORTEXs test point and observe the reported voltage. If an error code is present the voltage will vary to represent the error code. Because VORTEXs reports will vary with system voltage it is suggested to round each reported voltage either up or down to the nearest whole integer.

NOTE FOR SPARKX CARRIER BOARDS

As of carrier configuration v40, the position of the VORTEXs test point has been fixed beside the micro-b connector and can be identified by its smaller drill diameter in comparison to the rest of the GPIO header.

SP250Ψ Data Sheet Errata (Rev. A)

SPARK X
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5.3 Code Reference Table

The following are common error codes generated by the VORTEXs system. For a comprehensive list, please refer to index [redacted] of the document titled [redacted]-[redacted]

1 2 3 4 - [redacted]	0 2 3 4 - [redacted]
1 2 4 3 - [redacted]	0 2 4 3 - [redacted]
1 3 2 4 - [redacted]	0 3 2 4 - [redacted]
1 4 2 3 - [redacted]	0 4 2 3 - [redacted]
1 3 4 2 - [redacted]	0 3 4 2 - [redacted]
1 4 3 2 - [redacted]	0 4 3 2 - [redacted]
2 1 3 4 - [redacted]	0 1 3 4 - [redacted]
2 1 4 3 - [redacted]	0 1 4 3 - [redacted]
3 1 2 4 - [redacted]	0 1 2 4 - [redacted]
4 1 2 3 - [redacted]	0 1 2 3 - [redacted]
3 1 4 2 - [redacted]	0 1 4 2 - [redacted]
4 1 3 2 - [redacted]	0 1 3 2 - [redacted]
2 3 1 4 - [redacted]	0 3 1 4 - [redacted]
2 4 1 3 - [redacted]	0 4 1 3 - [redacted]
3 2 1 4 - [redacted]	0 2 1 4 - [redacted]
4 2 1 3 - [redacted]	0 2 1 3 - [redacted]
3 4 1 2 - [redacted]	0 4 1 2 - [redacted]
4 3 1 2 - [redacted]	0 3 1 2 - [redacted]
2 3 4 1 - [redacted]	0 3 4 1 - [redacted]
2 4 3 1 - [redacted]	0 4 3 1 - [redacted]
3 2 4 1 - [redacted]	0 2 4 1 - [redacted]
4 2 3 1 - [redacted]	0 2 3 1 - [redacted]
3 4 2 1 - [redacted]	0 4 2 1 - [redacted]
4 3 2 1 - [redacted]	0 3 2 1 - [redacted]