NOVO ENGINEERING®

CLIENT:	VotingWorks
PROJECT:	VXScan
DOCUMENT NUMBER:	VWX-002-D007
DOCUMENT TITLE:	3.1 Power Disturbances and Conducted Emissions/Immunity Test Report
REVISION:	X01
DATE:	7/24/2024

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1.0 PURPOSE AND SCOPE

The purpose of this test is to verify that the VXScan device meets the requirements for power line disturbances, emissions and immunity.

2.0 REFERENCES

2.1 Internal References

Document Number	Document Title
N/A	VxScan v3.1 and v4.0 Tests of Normal Function, 5/20/2024 Version

2.2 External References

Document Number	Document Title
IEC 61000-4-4	Electrical Fast Transients
IEC 61000-4-5	Surge Immunity
IEC 61000-4-11	Voltage Dips
IEC 61000-4-6	Conducted Immunity
IEC 61000-4-7	Conducted Emissions

3.0 ACRONYMS AND TERMS DEFINED

Acronym	Definition
EUT	Equipment Under Test
NRTL	Nationally Recognized Testing Laboratory

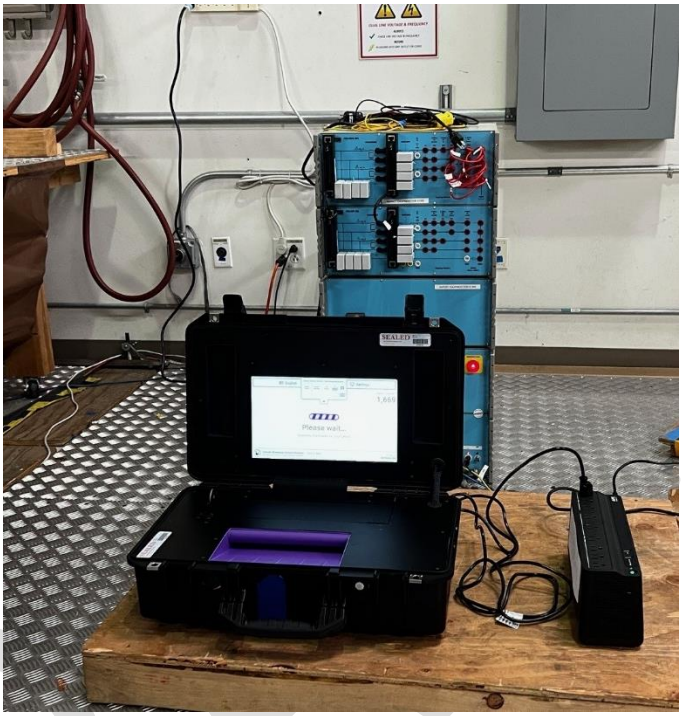
4.0 ITEMS UNDER TEST, MATERIALS, EQUIPMENT, AND CONDITIONS

4.1 Items Under Test

Item	Item #	Rev	Lot #	Sample Size
EUT	VXScan	3.1	n/a	1

4.2 Conditions

The tests are performed at room temperature conditions above a ground plane.



5.0 PROCEDURE

The EUT is connected to specialized test equipment at a NTRL. This equipment causes power disruptions such as fast transients, surges and voltage dips. It also injects signals into the power supplied to the EUT and measures any signals sent from the EUT out through its power input.

6.0 ACCEPTANCE CRITERIA

For power line disturbances and conducted immunity tests, the device continues to operate normally or has no unrecoverable errors. For conducted emissions tests, the recorded emissions are below the limits specified by the standard.

7.0 RESULTS

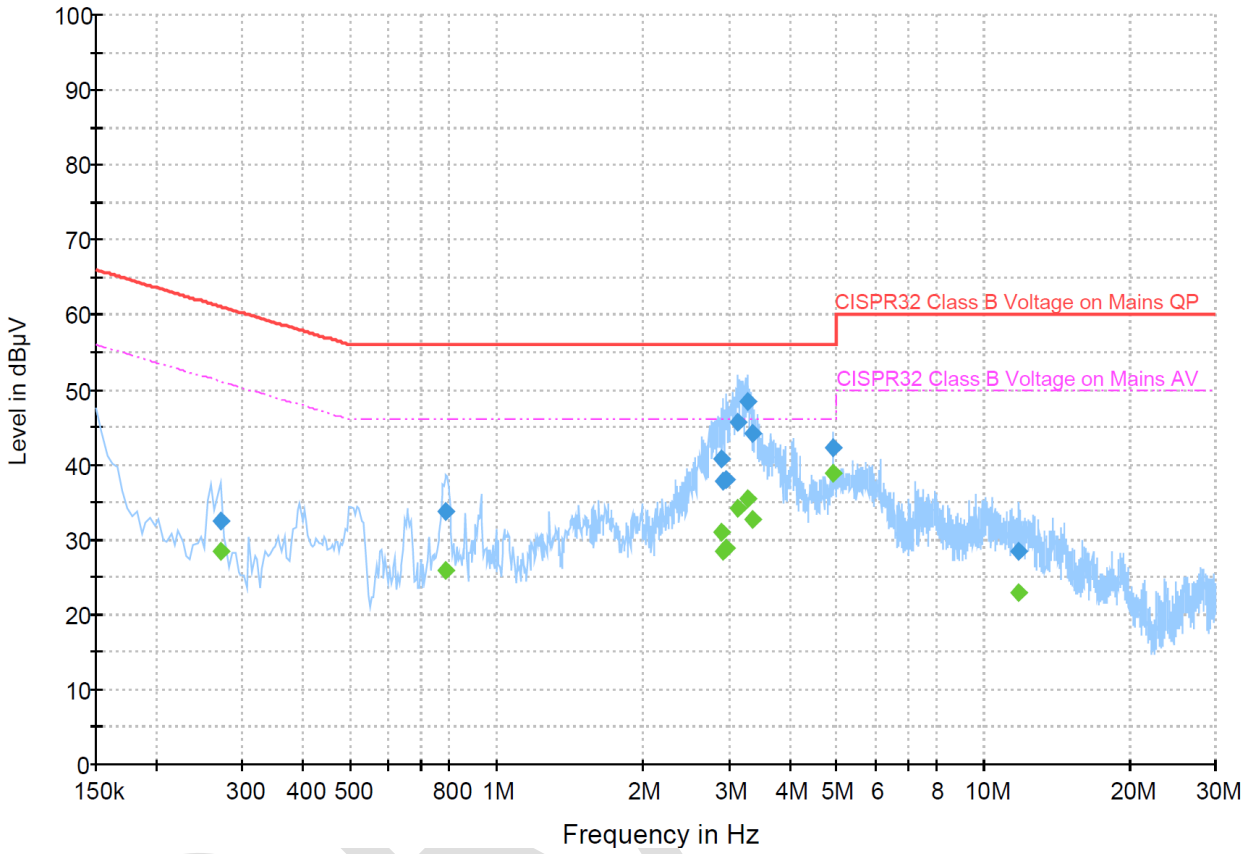
All but one test was passed without issues. During the voltage dip test, the UPS was not sufficiently charged to keep the EUT operating. Once normal power was restored, EUT operation was recoverable, so it passed the test.

8.0 CONCLUSION

Since the UPS is a certified device, is always a part of the system and is between the power source and the EUT, it is the primary factor ensuring that these tests pass.

APPENDIX 1: DATA

Conducted Emissions:



REVISION HISTORY AND APPROVALS

Rev	Description	CR#	Date	Submitted By
X01	Submitted to Client	N/A	7/24/2024	D. Dull