DATREND Systems Inc.

vPad Automation Capabilities

The vPad system supports automation of inspection, performance and safety testing using either vPad products, or other devices which can be controlled via a serial connection. Automation is accomplished through the use of checklists which are processed through the vPad-Check app. As of version 1.90 (and below), vPad-Check expects to be connected to a vPad-ES type safety analyzer, which acts as a hub for connection to other vPad or serial connected devices. Checklists can directly run an automated safety test in this setup. In addition, other test equipment may be connected through the safety analyzer and test results from the instrument(s) can be included in a test report.

If we start with vPad-ES, for instance, this provides basic manual test capabilities with the added features of: 1) a 25 point, preset inspection procedure at the start of the test; and, 2) the ability to save the test that has been done manually.

The first level of automation is vPad-AS, which allows the user to: 1) perform a 50 point, user definable inspection procedure; 2) show a set of user definable instructions at the start of the test (which can include photos, diagrams or videos); and 3) automate the safety test based on the end users needs (and save to a file for re-use as needed).

The next level of automation is vPad-Check, which allows the user to: 1) perform an unlimited number of user definable inspection steps, in any order; 2) include in the steps, at any point, a pre-defined, automated safety test (from vPad-AS/A3/NFPA) and optionally show a set of user definable instructions at the start of the test (which can include photos, diagrams or videos); and 3) run/control another vPad or serial controlled test device. At this level of automation, the user can implement PASS/FAIL limit criteria and can accept test data directly from other test equipment (when available) or enter the test data manually. A PM tag can be created at the end of the test.

The final level of automation is CMMS integration, in which the user can communicate with a CMMS system, receiving lists of devices due for PM inspection and returning test reports when testing is complete. vPad can interface with numerous CMMS systems using legacy Fluke medTester 5000C capabilities, or via an Internet connection using RESTful services. Contact Datrend to see if your CMMS system is currently supported, or to investigate connecting your CMMS system to the vPad system.

vPad Automation can include other features such as:

vPad-Cal	A database of test instruments used in the PM inspection process, including calibration information. Allows specific test device information to be included in a test report for complete traceability.
vPad-PMtag	Create or reprint a PM tag from a test report.
vPad-EQM	A simple, easy to use equipment maintenance manager which supports equipment lists, work orders and vPad Checklists; and resides on the tablet.

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Test equipment connection

vPad supports the interconnection of test equipment in the automation process. Test devices may include other vPad products, other legacy Datrend products, or other company test devices which are serial control enabled. The Datrend DACOM/XBUS is unique in the industry, allowing virtually unlimited connection of external devices in a daisy chain fashion.

An example of devices which can be connected to the safety analyzer via the Datrend DACOM/XBUS communications cable, allowing it to be included in a Procedure:

vPad-RF	For testing electrosurgical generators.
vPad-A1	For testing multi-parameter monitoring systems which include ECG, Respiration, IBP, SpO2, NIBP. (Note. interconnection capability due Q1 2017)
vPad-MBOX	A device to interface the vPad system to serial connected devices, including (but not limited to):

Datrend: Phase 3, Oxitest, Infutest, AMPS-1, FMS-3
Fluke*: Impulse 4000, 454 ESU, CuffLink, SigmaPace, etc.
Pronk*: SimCube, OxSim

* Can control and receive test results from any device which uses RS-232 communications and returns results in ASCII text data. User must have access to RS-232 control protocol from manufacturer of device.

vPad-XSC	A device specific interface. Required for devices which are USB serial interfaced, or where the data returned is encoded or contains multiple data values.

Currently available: XSC Phase3; XSC Fluke 7000; XSC PF300

Others can be developed on request.

Note that some devices do not lend themselves to connection to an automated procedure in the vPad-Check system. In particular, test devices that run for a very long time to get the test result(s) would unnecessarily tie up the safety analyzer for the same time as the test device is operating. Examples of this are vPad-IN (for baby incubators), vPad-RW (for radiant warmers), vPad-TI (for transport incubators) and Infutest (for infusion pumps); which have test times that are typically in hours. To accommodate this, with vPad Record Manager it is possible to merge performance test reports with inspection checklist reports after the fact, to create a single test record.