Software Update Release Notes

5.01R

Field update compatible with	Release date	Impact on VOCSN settings
Field compatible with versions 4.03 and newer. Not compatible with versions 4.02 and older: Contact Ventec Life Systems to update this software.	July 2022	No impact

1 Improved triggering performance.

2 New Peak Insp Flow & Peak Exh Flow monitors.

3 Updated Volume Targeted modes by decoupling Tidal Volume and Inspiratory Time.

4 Improved O2 Concentration alarm criteria.

5 Improved Service Concentrator Soon alarm criteria.

6 New O2 Tube Disconnect alarm.

7 New Media Bed Health monitor.

8 Improved FiO2 monitor responsiveness.

9 Improve life of battery by updating Battery Firmware on power down.

5.00R

Field update compatible with	Release date	Impact on VOCSN settings
Field compatible with versions 4.03 and newer. Not compatible with versions 4.02 and older: Contact Ventec Life Systems to update this software.	2/4/2021	No impact

1 Introduced Quick View menu for faster access to commonly used therapies and features.

2 Support for VOCSN Multi-View™ Streaming (including new Mark Event button).

3 High Flow therapy improvements, including:

- New "Low Flow" alarm during High Flow therapy.
- Minimum flow during High Flow raised to 5 L/min. This also means that if Nebulizer is active during High Flow therapy, the minimum flow is 11 L/min.
- Added pop-up alert when the Circuit Type is set to Valveless during High Flow therapy.

4 Updated Maintenance Due and Service Concentrator Soon alarms so that they recur every 32 hours (instead of 8 hours) when cleared.

5 V+O+C+S+N factory default Oxygen Source setting changed to Internal O2 Concentrator.

6 Japanese translation updates.

4.13R

Field update compatible with	Release date	Impact on VOCSN settings
Field compatible with versions 4.03 and newer. Not compatible with versions 4.02 and older: Contact Ventec Life Systems to update this software.	8/11/2020	No impact

1 Alarm tone detection improvements.

4.12R

Field update compatible with	Release date	Impact on VOCSN settings
PField compatible with versions 4.03 and newer. Not compatible with versions 4.02 and older: Contact Ventec Life Systems to update this software.	7/8/2020	No impact

1 Introduced support for the V+C+S+N+Pro configuration.

2 Reduced sensitivity of Check Patient Circuit alarm.

3 Removed O2 tube check from Pre-Use Test when High Flow is On.

4.11R

Field update compatible with	Release date	Impact on VOCSN settings
Field compatible with versions 4.03 and newer. Not compatible with versions 4.02 and older: Contact Ventec Life Systems to update this software.	5/26/2020	No impact

1 Introduced Battery Storage Mode feature.

4.10R

Field update compatible with	Release date	Impact on VOCSN settings
Field compatible with versions 4.03 and newer. Not compatible with versions 4.02 and older: Contact Ventec Life Systems to update this software.	4/30/2020	No impact

1 Alarm tone detection improvements.

4.09R

Field update compatible with	Release date	Impact on VOCSN settings
Field compatible with versions 4.03 and newer. Not compatible with versions 4.02 and older: Contact Ventec Life Systems to update this software.	4/17/2020	No impact

1 Introduced the Inspiratory Hold feature. An Inspiratory Hold maneuver can be performed during Volume ventilation with an Active circuit for adult patients. A pressure waveform is provided during the hold. After the maneuver, a Plateau Pressure and Static Compliance monitor will display.

4.08R

Field update compatible with	Release date	Impact on VOCSN settings
Field compatible with versions 4.03 and newer. Not compatible with versions 4.02 and older: Contact Ventec Life Systems to update this software.	4/12/2020	No impact

1 Introduced support for the V+Pro Emergency configuration.

4.07R

Field update compatible with	Release date	Impact on VOCSN settings
Field compatible with versions 4.03 and newer. Not compatible with versions 4.02 and older: Contact Ventec Life Systems to update this software.	4/5/2020	No impact

1 Introduced support for the V+C+S+N+Pro and V+Pro configurations.

VOCSN

4.06R

Field update compatible with	Release date	Impact on VOCSN settings
Field compatible with versions 4.03 and newer. Not compatible with versions 4.02 and older: Contact Ventec Life Systems to update this software.	3/9/2020	If any of the three VOCSN Ventilation Presets are configured with Volume Targeted set to On, the Mode control will automatically update to one of the equivalent corresponding Vol. Targeted Mode settings. (The delivered Ventilation therapy is unchanged.) • Bi-Level with Volume Targeted On = Vol. Targeted-PS • AC-Pressure with Volume Targeted On = Vol. Targeted-PC • SIMV-Pressure with Volume Targeted On = Vol. Targeted-SIMV

1 Introduced VOCSN Multi-View. After updating software to 4.06, VOCSN will begin recording Multi-View data. Using the "Export" button on the Event Log screen, data can be uploaded to the web to generate 5-therapy usage reports. This change also includes:

- "Reset to Factory Defaults" replaced with "Reset for New Patient," which both resets VOCSN factory default settings and restarts Multi-View data recording from scratch.
- Removed "Export Troubleshooting Logs." This information is now embedded in Multi-View exports.

2 Added software support for Leak+. When combined with a compatible hardware configuration, the software upgrade will enable automatic compensation for leaks up to 175 L/min at 20 cmH2O. To check if your device includes Leak+ performance, look for the "V" icon in the status bar with a white background after the software update.

3 Improved O2 concentrator media bed life. The Service Concentrator Soon alarm criteria was updated to trigger based on media bed life, not just hours of use. Customers with new media beds will be able to use the O2 concentrator longer before requiring service. The Calculated FiO2 monitor is also more accurate.

4 To simplify the use of the VOCSN Volume Targeted feature, the "Volume Targeted" control was removed, and in its place, three new ventilation modes were introduced:

- Vol. Targeted-PS (equivalent to Bi-Level with Volume Targeted On, and a PEEP (instead of EPAP) control)
- Vol. Targeted-PC (equivalent to AC-Pressure with Volume Targeted On)
- Vol. Targeted-SIMV (equivalent to SIMV-Pressure with Volume Targeted On)

This change also included replacing the "Backup Rate" control with "Breath Rate" in all modes.

5 Added Patient Circuit Disconnect alarm performance improvements to reduce nuisance alarms, including:

- Delay settings up to 15 Breaths.
- New Sensitivity toggle to change the threshold at which the alarm activates. The 0-75 setting is intended for use with small and medium leaks, and the 75-175 setting desensitizes the alarm to reduce nuisance alarms when used with large leaks around the patient interface.

6 Improved pressure breath waveforms, PEEP/EPAP performance, and the comfort of volume breaths when using passive patient circuits.

7 Expanded range of Leak monitor up to 200 L/min.

8 The Oxygen therapy indicator will remain visible when using a low-pressure source at the same time as other therapies.

9 Improved the performance of the High Pressure alarm when there are large leaks in the patient circuit.

10 Added color and icons to indicate when control limiting requires the user to update settings before providing therapy to the patient.

11 "Device Information" section added to the My VOCSN screen, which includes the device configuration, its default language, and whether or not the device hardware is Leak+ compatible.

12 Various small improvements, including fixes to Cough therapy when Exsufflation Time set to 0.0, altitude performance, and others.

4.05R

Field update compatible with	Release date	Impact on VOCSN settings
4.04R 4.03R 4.02R 4.01.07R 4.01.06R 4.01.03R	8/19/19	No impact

1 Protection against potential screen display issues.

4.04R

Field update compatible with	Release date	Impact on VOCSN settings
4.03R 4.02R 4.01.07R 4.01.06R 4.01.03R	8/1/19	No impact

1 Protection against potential control board issues that may arise when blower runs at maximum speed.

2 Compliance with DO-160 flight regulations when used with new PRT-00532-003 control board.

3 Increased battery icon resolution shows greater charge status detail (in 1 pixel increments instead of 25% increments).

4 Minimum PEEP setting for Valveless circuits increased from 0 to 4 cmH2O.

4.03R

Field update compatible with	Release date	Impact on VOCSN settings
4.02R 4.01.07R 4.01.06R 4.01.03R	5/16/19	High Pressure alarm setting may change. (User will be notified upon reboot after software update.) New available settings for Volume Targeted feature: • Pres. Minimum • Pres. Adj. Rate

1 Volume Targeted feature improvements for increased patient comfort, including new Pres. Minimum and Pres. Adj. Rate controls. During Volume Targeted ventilation, users can now set the minimum inspiratory pressure for Volume Targeted breaths, as well as set whether pressure adjustments occur at a Slow (up to ±1 cmH2O per breath) or Fast (up to ±3 cmH2O per breath) rate.

2 External Nebulizer Compensation feature released. A selection and start/stop button allows users to compensate for 6 L/min of flow from an external nebulizer during Ventilation, Oxygen, and Suction therapies.

3 Introduced software support for V+O+C+S+N and V+C configurations.

4 Improved Pulse Dose oxygen delivery for pediatric patients, and improved waveform stability during volume ventilation at low Tidal Volume settings with high O2 Flow Equivalent settings.

5 Pre-Use Test and internal O2 Concentrator performance improved at high altitudes.

6 "O2 Concentrator Usage" monitor modified to display total hours oxygen therapy has been running, rather than incrementing only when the concentrator activates to fill the oxygen tank. (Concentrator activation is intermittent during normal oxygen delivery, and is counted and displayed using the new "VPSA Usage" monitor).

7 "Maintenance Required" alarm changed to "Maintenance Due" and now only occurs when the Sys. PM Due In monitor falls below 0. The "O2 PM Required In" monitor was removed. Instead, a new low-priority "Service Concentrator Soon" alarm activates when service should be scheduled on the internal O2 Concentrator.

8 Minimum Flow Trigger setting reduced to 0.5 L/min. Control resolution (increments) also reduced to 0.5.

9 Nebulizer Filter image added to Patient Circuit Help screen for configurations that include Nebulizer therapy.

10 Button caption on Event Logs screen changed from "Events" to "Export Events."

11 Enhanced Cough therapy alarm detection criteria.

12 Enhanced Calculated FiO2 monitor readability.

4.02R

Field update compatible with	Release date	Impact on VOCSN settings
4.01.07R 4.01.06R 4.01.03R	1/11/19	No impact

1 Improved software stability.

2 Improved O2 Flush feature. The Oxygen therapy stop button is inaccessible during O2 Flush to minimize accidental Oxygen therapy stoppage.

3 Powering down VOCSN by pressing OK in the confirmation pop-up is now disabled while the screen is locked.

4 While Nebulizer therapy is running, minutes can now be added to the Nebulizer Duration by using the "+" button.

5 New screen added to remind users to disconnect the nebulizer from VOCSN and the patient circuit after Nebulizer therapy ends.

6 Pre-Use Test improved. A caution appears before starting the test and pausing Ventilation therapy, and a red banner with the message "ventilation is paused" is displayed during the test. If the screen is not touched for

20 seconds during or after the test, Ventilation therapy will automatically resume.

4.01.07R

Field update compatible with	Release date	Impact on VOCSN settings
4.01.06R 4.01.03R	9/26/18	No impact

1 Improve power management to prevent battery use alarms under high power loads (i.e., simultaneously use of aggressive ventilation, oxygen concentration, and battery charging).

2 Improved software stability when continuously scrolling through a screen with a list (i.e. monitors configuration, ventilation presets) for an extended time.

4.01.06R

Field update compatible with	Release date	Impact on VOCSN settings
4.01.03R	9/07/18	No impact

1 Improved volume delivery of aggressive volume control breaths.

2 Improved pressure servo for mouthpiece circuits.

3 Speed the return-to-PEEP time.

4 Improved Vte monitor stability during auto-zeros.

5 Improved the default circuit resistance model for adult heated valveless circuits in case the Pre-Use test is not run.

6 Reduced trigger timing.

7 Improved PEEP performance with low compliances and very large leaks.

8 Improved pressure control performance with large leaks.

9 Improved FiO2 accuracy of pressure control breaths and large leaks and FiO2 setting >60%.

10 Improved the power off sequence: For normal power-down: Press and hold the On/Off button until the confirmation window appears, and then press "OK." For alternate power-down: Press and hold the On/Off button until the unit beeps, and then hold the Audio Pause button until the unit shuts off.

11 Updated Nebulizer and Cough Therapy Interaction. Nebulizer now pauses (it does not stop) during cough therapy and then automatically resumes after cough therapy.

12 Improved nurse call alarm system response. When an alarm occurs, the nurse call will activate for a minimum of 6 seconds to ensure that recurring high pressure alarms trigger a nurse call alarm for hospital systems that have a 10-second filter/delay.

13 Improved software stability.