

# SpiroReporter

Spirometry software for pulmonary diagnostics and monitoring



## State-of-the-Art Spirometry

Uscom spirometers are highly accurate. The SpiroReporter software features automated quality control feedback as well as automated decision support system. Based on features introduced in ATS 2017 and 2019, it extends functionality with custom error pictograms, user acceptance, continuous BTPS correction, and traced sensor accuracy. Such enhancements contribute to improved efficiency and accuracy during spirometry assessments.



## Spirometry and Oximetry platform

SpiroReporter is a respiratory diagnostics software, for use with SpiroSonic spirometers, Uscom automated weather stations, and selected 3rd party fingertip pulse oximeters. Patient data can be synchronized with SpiroSonic SMART device memory and SpiroSonic Android app. Standard data interfaces including HL7, GDT and XML are available for easy integration into hospital information systems.



## Audio-Visual Incentives

SpiroReporter features a graphics incentive engine to support kids and the elderly in proper diagnostic manoeuvres. SpiroReporter incentives will enhance spirometry results through fun, games and colorful adventures in virtual worlds. The software supports dual displays, with the main display providing essential information to the operator and a separate screen dedicated to displaying incentives to the patient.



## Robust Report Customization

SpiroReporter includes built-in report templates, including maneuver-specific options. Users can customize report headers to show their organization. SpiroReporter also provides a graphical report template editor that allows users to have full control over customizing their reports to meet specific requirements.

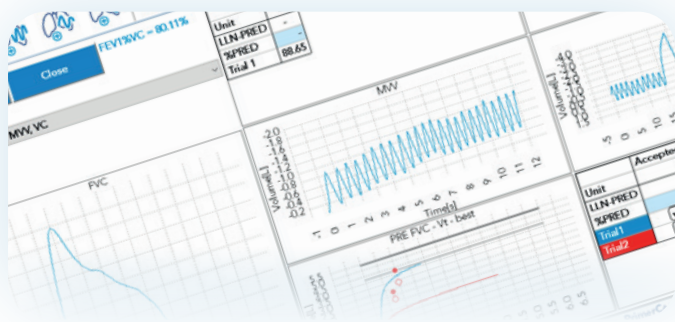
SpiroReporter is an all-inclusive spirometry software solution for respiratory diagnostics, monitoring, archiving, analysis, trend analysis, reporting, exporting data and much more.

## SPIROREPORTER FEATURES



### Enhanced Efficiency and Security

- ✓ Intuitive user interface
  - + Track the status of any connected Uscom spirometer, automated weather station or compatible oximeter
  - + Patient data management with integration options
  - + Real-time monitoring of ambient conditions
  - + Live ambient data (if SpiroSonic Weather Station is connected)
- ✓ Interactive multi-level help - tool-tips, tutorial videos, simulated maneuvers, software updates, prompt help-desk
- ✓ Secure user access control and database - compatible with GDT
- ✓ Efficiently filter patients in real time using six data points

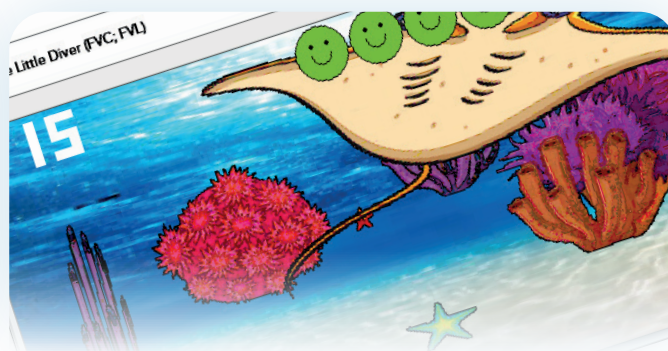


### Diagnostic Results

- ✓ FVC, SVC, and MVV sessions of a visit are consolidated and shown on a single result page or report
- ✓ Integrated diagnostic parameter FEV1%VC is calculated if there are both FVC and SVC sessions in the visit
- ✓ SVC and FVC parameters on display are selectable.
- ✓ A comprehensive report is provided. The displayed set of SVC and FVC parameters can be configured.
- ✓ A comprehensive report is provided

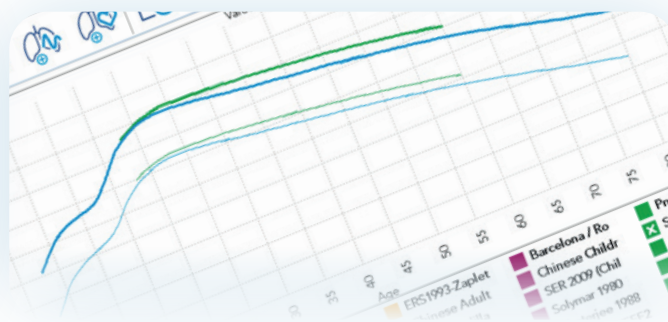
### Customizable Reporting

- ✓ Extensive collection of built-in factory report templates, including additional templates for each spirometry maneuver
- ✓ Customizable report headers catering to different healthcare organizations.
- ✓ True custom graphical report template editor
- ✓ Option to attach reports to HL7 or GDT results, ensuring seamless integration with existing systems.
- ✓ Options to optimize the curves for black & white or color printing
- ✓ Generate report to paper, PDF, and DICOM
- ✓ Built-in templates for A4 and small thermo-printers



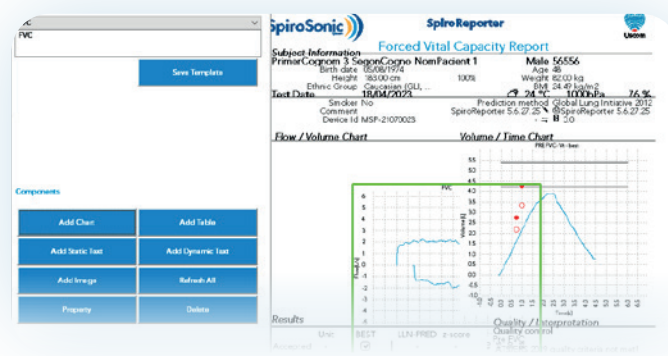
### Pediatric Spirometry with Innovative Incentives

- ✓ 6 distinct incentives, each offering versatile scenes and customizable details
- ✓ Real-time and reward (win or fail) animations
- ✓ Innovative feedback system based on logarithmic volume-driven emoticons (ranging from 0-9, depicting angry to smiling faces)
- ✓ In-place adjustable acceptance threshold starting from LLN of FVC
- ✓ Gamified spirometry experience with a motivating target: animation of a bouncing car. The software will calculate the flight path and display real-time positions as a score.
- ✓ The graphical incentives can be shown on the 2nd monitor
- ✓ Spirometry prediction algorithms for children are included
- ✓ Challenge test for children (Exercise Induced Bronchospasm)

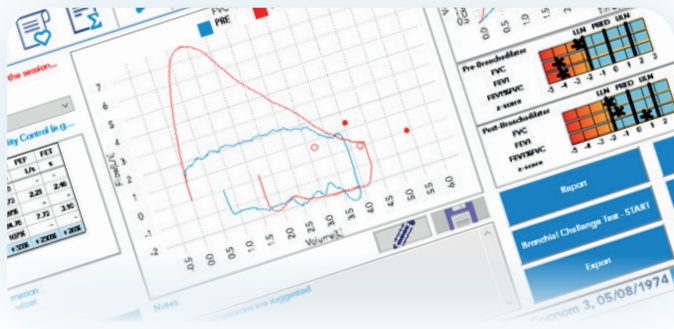


### Predictions - visualization and comparison

- ✓ FVC, SVC, MVV are supported
- ✓ Display of Lower Limit of Normal (LLN) values for reference
- ✓ Chart display option to compare a selected parameter across age, height, and weight.
- ✓ Useful scientific tool also for constructing mixed predictions: e.g. GLI + ERS 1993 (PEF, FEF values)
- ✓ Database storage of all successful and failed calibration check sessions, allowing for future retrieval, analysis, and printing.



SpiroReporter offers advanced ultrasonic digital spirometry with optional oximetry to medical professionals including pulmonologists, occupational therapists and general practitioners.



**PRE and POST Bronchodilator protocols**

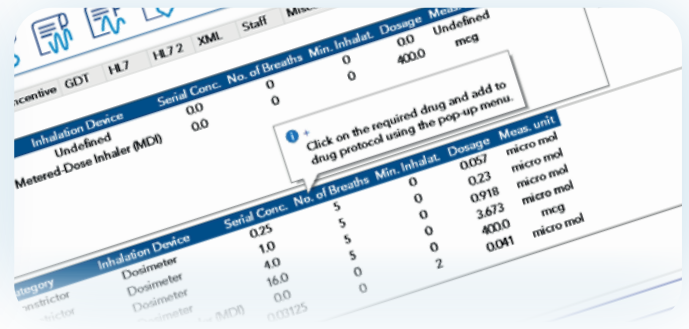
- ✓ Zero-flow calibration before the tests
- ✓ Ability to block new spirometry sessions in the settings if ambient parameters have expired
- ✓ Measure FVC (up to 8 trials), SVC (up to 8 trials), and MWV
- ✓ 45 different predictions
- ✓ ATS 2019 (9 QC issues, z-score)
- ✓ Automatically detect QC errors and display ATS 2019 AUS flags for FEV1 and FVC for each trial
- ✓ Manually acceptable / rejectable trials: each one of the trials among the PRE and POST steps are accessible, selectable, displayable and "configurable" (acceptable, best trial)
- ✓ Quick POST session with default respiratory drug
- ✓ Extensive respiratory drug database which can be extended with custom drugs/doses
- ✓ ATS/ERS 2005, 2017, 2019; NLHEP; CTA2019; (w/o QC)
- ✓ Interpretation: NLHEP 2000; ATS/ERS 2005; Gold/Hardie 2002
- ✓ Display selectable parameters on session and result pages, as well as configurable parameters on the report page.
- ✓ Configure the content of the parameter table, including PRED, % PRED, BEST, or LLN-PRED, BEST, z-scores, and more.
- ✓ Pre-configured report templates

Unit	Accepted	Errors	FEV1	FVC	LLN	PRED	LLN-PRED	z-score
PRED1	✓	4.43	5.62	5.62	91%	72.11	7.75	9.2
PRED1%	✓	93%	101%	97%	79.23	-	-	-
BEST1	✓	4.11	5.70	5.44	90%	71.10	7.61	8.3
PRED2	✓	4.43	5.62	5.62	91%	72.11	7.75	9.2
PRED2%	✓	92%	102%	95%	79.23	-	-	-
BEST2	✓	4.06	5.71	5.36	90%	71.10	7.61	8.3
		-1%	+0%	-1%	-1%	-2%	-1%	-1%

**Age and weight adjusted comparisons**

- ✓ Comparing two FVC measurements, including FVC charts, V-t charts, and related parameters
- ✓ Suitable for use in smoking cessation programs and monitoring pulmonary function progress
- ✓ Predicted values are adjusted to the date of the measurement, providing accurate reference points
- ✓ Pre-configured report templates

To learn more about the Uscom premium spirometers, please visit [spirosonic.com](https://www.spirosonic.com)



**Respiratory drugs and drug protocols**

- ✓ An extensive range of preloaded bronchodilators, bronchoconstrictors are included with placebo effect simulation options
- ✓ Respiratory drugs and drug protocols can be edited and new options added.
- ✓ POST-BD drugs
- ✓ Bronchial Challenge Test protocols (Methacholine - ATS 99 long, ATS 99 short, Mannitol)



**Oximetry**

- ✓ Selected 3<sup>rd</sup> party USB pulse oximeters can be connected in SpiroReporter for short SpO2 measurements (40 seconds or 40 minutes) with statistical analysis and threshold analysis
- ✓ Advanced SpO2 monitoring, including but not limited to overnight sessions and Six Minute Walking Tests, can be imported from SpiroSonic SMART
- ✓ Customizable spirometry report page will include SpO2 levels
- ✓ Pre-configured report templates



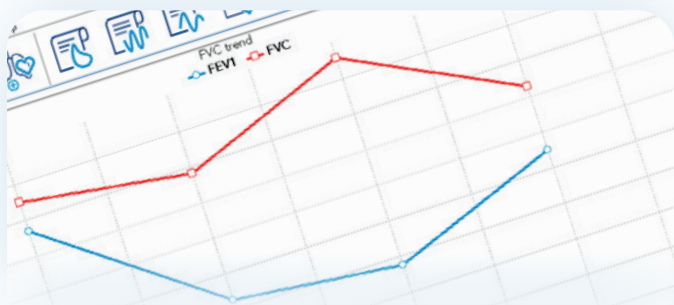
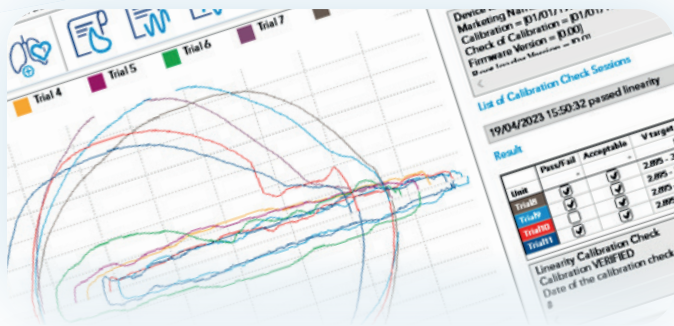
**Export / Import**

- ✓ Import patient database from SpiroSonic SMART, including FVC, SVC, MWV, Short SpO2, SpO2 Overnight Session, and Six Minute Walking Test data.
- ✓ Import sessions from SpiroSonic Android app (FVC)
- ✓ Import patients from CSV (Excel) files for easy data integration.
- ✓ Import SpiroReporter FVC sessions in XML format, exported by another SpiroReporter software
- ✓ Import databases from other SpiroReporter software installations
- ✓ Export spirometry sessions to various file formats, including PDF, DICOM, Excel, XML, GDT result, and HL7 result files (optional formats may vary)



### Device Calibration Checks

- ✓ Charts automatically fit/maximize to the screen
- ✓ Preconfigured Report Templates
- ✓ All sessions are saved to the database and can be retrieved
- ✓ Sensor tracing
- ✓ Freestyle Calibration check
  - + Allows flexibility without specific criteria on the number of push- pull cycles or flow range
  - + All trials are evaluated together
- ✓ Linearity Calibration check
  - + Session page with range
  - + Trials within each range are evaluated together, providing an overall assessment of the session
  - + 3 flow speed targets are checked by default (0.5, 1.0 and 5.0 L/s)
  - + Set of flow ranges are customizable: up to 5 flow ranges can be defined with increasing values



Uscom **SpiroReporter** - the ultimate spirometry solution for accurate diagnostics and advanced reporting. Seamless integration with SpiroSonic devices. SpiroReporter offers managed accuracy, customizable reports, and an engaging Incentive Engine.



### Connect to Hospital Information Systems

- ✓ GDT protocol
  - + Multiple versions of the GDT protocol are available for compatibility
  - + Result GDT files can include parameter tables with the best or all trials, flow samples of the best or all trials, notes, interpretation, and more
  - + The GDT mode is clearly displayed on the main window
  - + Report in PDF can be generated next to the GDT result file
  - + GDT integration is highly customizable, allowing for file naming, file types, and selection of ordered spirometry (FVC, SVC, MVV, or others) with visual options
  - + Various configurable parameters for GDT are available in the graphical user interface (GUI) and/or the configuration file
- ✓ HL7 protocol
  - + HL7 Order Manager to automatically process
  - + Incoming HL7 orders
  - + Support for both ASCII and XML-based orders/patient files
  - + Generation of spirometry result files (XML) compatible with CDA r2 rev 3 standards
  - + A wide range of configurable parameters for HL7 integration, accessible through the GUI and/or a configuration file
- ✓ DICOM
  - + The spirometry report is embedded as an image (JPEG) file within the DICOM data
  - + Relevant DICOM tags are also populated in an integrated framework

### Trend of FVC sessions

- ✓ Trending of one or more FVC parameters
- ✓ Filter options available to specify start date and end date
- ✓ Configurable display of FVC parameters
- ✓ Patient progress and condition monitoring ranges can be defined with increasing values

For more information, visit [spirosonic.com](http://spirosonic.com)