



Safer Solutions for
Safer Hospitals

Electronic Medical Records
One System with Multiple
Solutions!



VIPER

Integrated Work Station and Tablet Solutions

The VIPER EMR module has been developed using an app-based architecture. This modern approach to software design ensures that the clinical interface is highly flexible and easy to configure for a wide range of clinical workflows.

Easy to learn and use, the VIPER EMR “App Store” software is highly responsive with single tier navigation offering peace of mind that the process of electronic data collection will not impact patient care or patient safety. It is ideally suited as a solution for the clinical specialty areas not typically supported by larger enterprise systems or where flexible-workflow is a key requirement for clinical use.

VIPER: The Next Generation Work Station designed for the Clinical Specialty

The VIPER Work Station utilizing the VIPER “App-Store” software is Spectrum Medical’s solution to clinical interfacing, 3rd party device integration, data collection and the generation of an EMR for a range of clinical specialties including Anesthesia, Perfusion and ECMO.

Manufactured from medical grade aluminum materials with the latest capacitance touchscreen technologies, the VIPER Work Station complies with the latest medical and safety regulations and comes with a 15" portrait screen.

VIPER Tablet: Flexible, Lightweight and Portable

Operating as either a standalone solution or as an adjunct to a VIPER Work Station installation, the VIPER Tablet adds mobility and flexibility to Spectrum Medical’s world leading EMR solutions. Utilizing the identical App Store software as that used in the VIPER Workstation minimizes user training and increases flexibility which is especially important when creating the Pre-Operative and Post Anesthesia Care records.

Furthermore, Wi-Fi capability enables the Tablet to stay connected to the Vision Server to ensure real time HL7 integration with the HIS.



Viper Tablet





Viper Workstation

Medical Device Connectivity:

To reduce the costs associated with EMR adoption, Spectrum Medical has integrated device connectivity as a standard capability with in the VIPER Work Station, thereby eliminating the requirement for a third party connectivity solution provider.

Key features of VIPER's device connectivity solution are:

- Positive patient association with all collected data.
- Data collection from all physiologic monitors and ancillary devices in the OR or specialty setting.
- VIPER's connectivity solution supports near real-time transfer of data for remote trending analysis and patient alert systems.
- Connectivity options including RS232, Wi-Fi and conventional wired networks.



VISION

The Powerhouse behind Spectrum Medical's Clinical Information System.

VISION is a sophisticated server application that is the hub of Spectrum Medical's EMR technology. VISION automates the system-wide maintenance of software, the creation and transfer of patient records (end of case and real time) and the storage and retrieval systems for complex clinical data sets.

About VISION

VISION is loaded onto a customer-supplied server with access to Microsoft Windows Server 2008 and Microsoft SQL 2008 Workgroup Edition database. VISION allows data collected on the VIPER Clinical interfaces to pass through to the patient's EHR using HL7 interface & PDF uploads to the Hospital Information System using an integrated communications interface engine supplied by MIRTH Inc.

The VISION server logs near real time case data on a per second basis and duplicates records as an additional data security measure. Should a VIPER monitor fail while a case is running, exchanging the monitor will immediately recover the case.

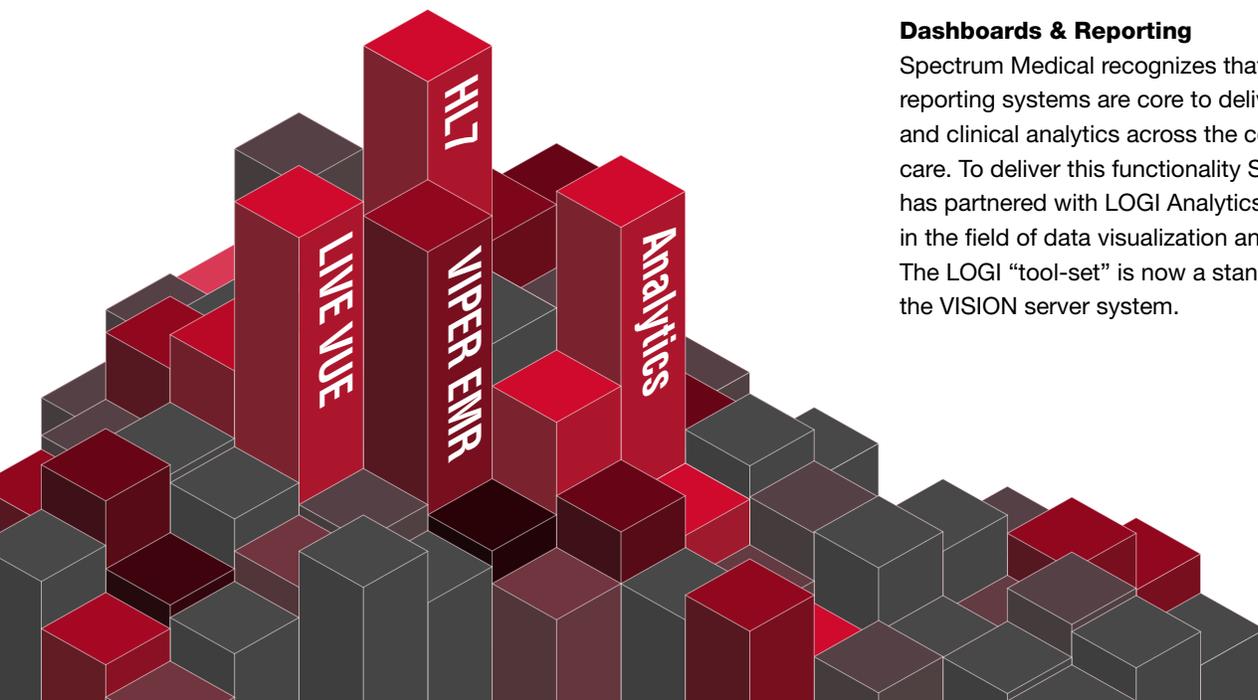
The VISION server allows users to create standardized or scheduled monthly reports. It allows for the distribution of software upgrades, windows and security updates, remote access service, password and access privileges management. VISION will also support integration with Active Directory.

Changes to the VIPER interface are simple and made quickly using VISION's web interface. All changes made and saved on VISION are automatically communicated to all VIPER Clinical Interfaces when a new case is started or when a VIPER unit is reconnected to the VISION network.

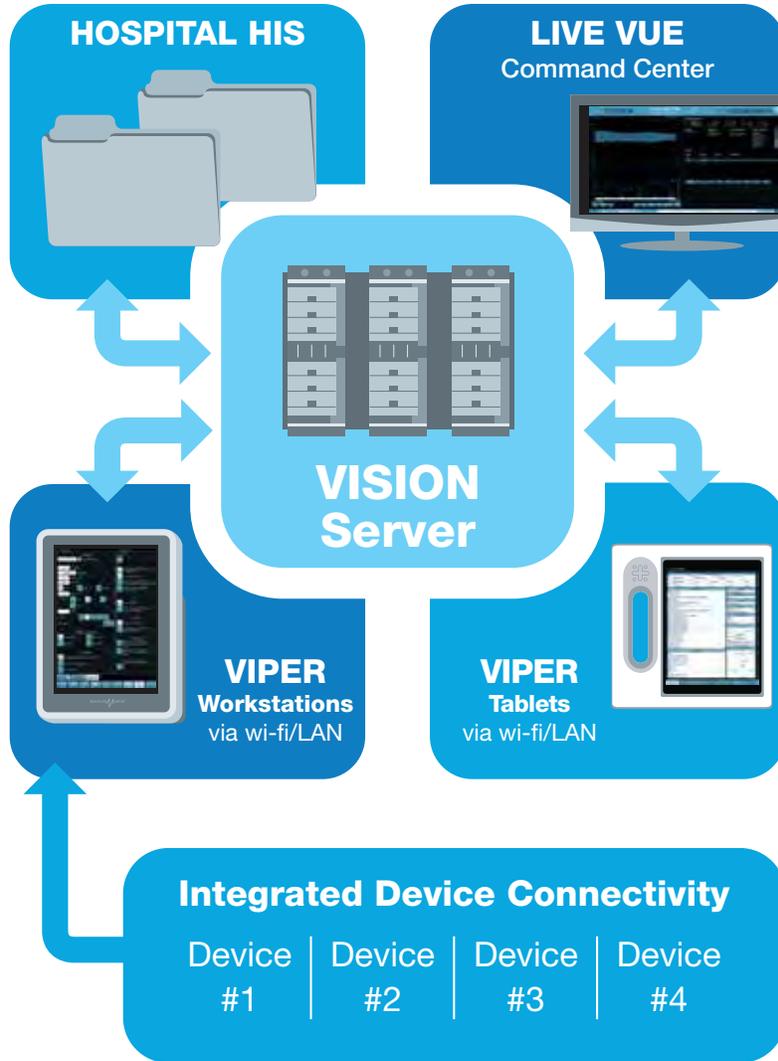
Finally, an IT solution that empowers front-line clinical staff with advanced analytics that allow the effective implementation of strategies that deliver improvements in Patient Care, Patient Safety and Outcomes.

Dashboards & Reporting

Spectrum Medical recognizes that dashboards and reporting systems are core to delivering information and clinical analytics across the continuum of health-care. To deliver this functionality Spectrum Medical has partnered with LOGI Analytics a recognized leader in the field of data visualization and data analytics. The LOGI "tool-set" is now a standard module within the VISION server system.



The Spectrum Network



Search Engine Configuration

A unique feature of the VISION Clinical Search Engine is the ability to auto configure the user interface and data base structure (SCHEMA) to reflect the addition of new data points to the patient record. Formatting of new data points is facilitated by changes to the VIPER clinical interface. Once this data is uploaded to the VISION database the search engine will automatically display the new options for query. This level of sophistication substantially reduces the IT resources needed to support the system.

Another feature of the VISION Search Engine is the ability to pre-program the processing of routine complex

high-resolution queries following case closure and upload to the database. Thereby reducing the retrieval time for complex queries.

Case Playback

Case Playback is a technology that is used to retrospectively re-play a patient's record in near real time; continuous information including waveforms and all case related events, such as medication delivery, best practice alerts, personnel activity and so much more. Stop, Pause, Fast Forward and Re-Play are standard features within the Case Playback program.

LIVE VUE

A Tele-Health Solution for Critical Care Clinicians.

LIVE VUE is Spectrum Medical's web-based near real time remote access tool. System privileges allow for the remote viewing of live clinical data, while hardware configuration supports detailed and simultaneous viewing of multiple patients.

Using the latest web based near real time technologies; clinicians can now access a wide range of information from multiple locations to enhance patient safety and rapid decision support.

Vital Signs	EKG Readings
Medication Delivery	Nursing Events
Best Practice Alerts	Compliance Data
Hemodynamics	

Viewing Modes

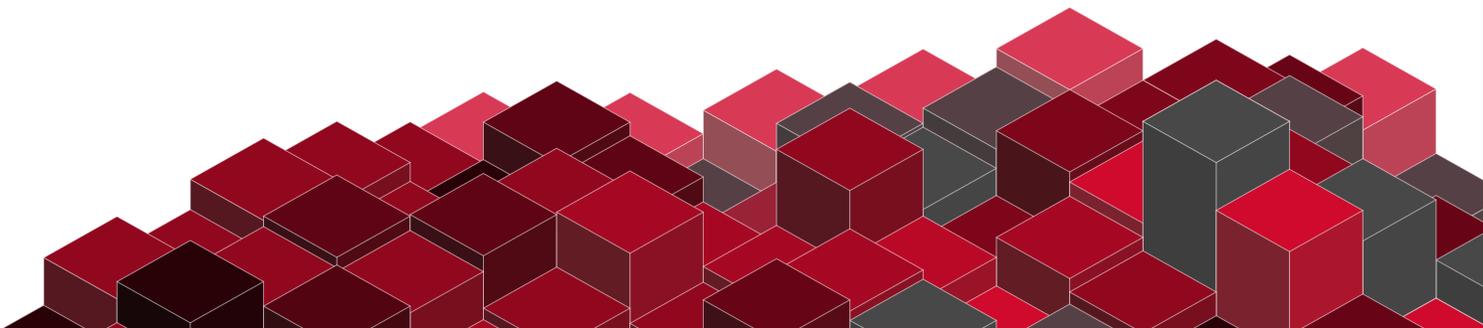
The **Command Center**, LIVE VUE's home page, can display near real time patient data by Hospital, Department or User Group within a Department. Command Center has the capability to present summarized patient data (including compliance data) in either a **"Big Board"** or **"Team Track"** VUE.

The **Big Board** VUE will display a clinical summary of all patients within a Hospital, a Department or User Group.

The **Team Track** VUE is a unique function from Spectrum Medical that can channel near real time clinical data from a number of remote or disconnected locations, supporting the work flow of the supervising physician or clinician.

Selecting a patient from within the Command Center will activate LIVE VUE's unique **App Structure**.

The App Structure allows the clinician access to patient specific information at the highest levels of granularity. This information can be displayed in current and trending formats.





Integrated Alert Systems

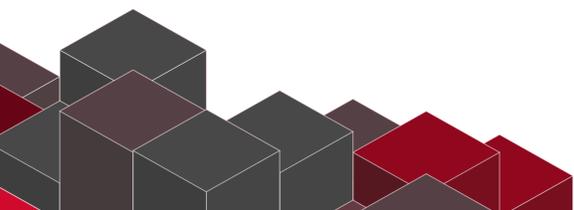
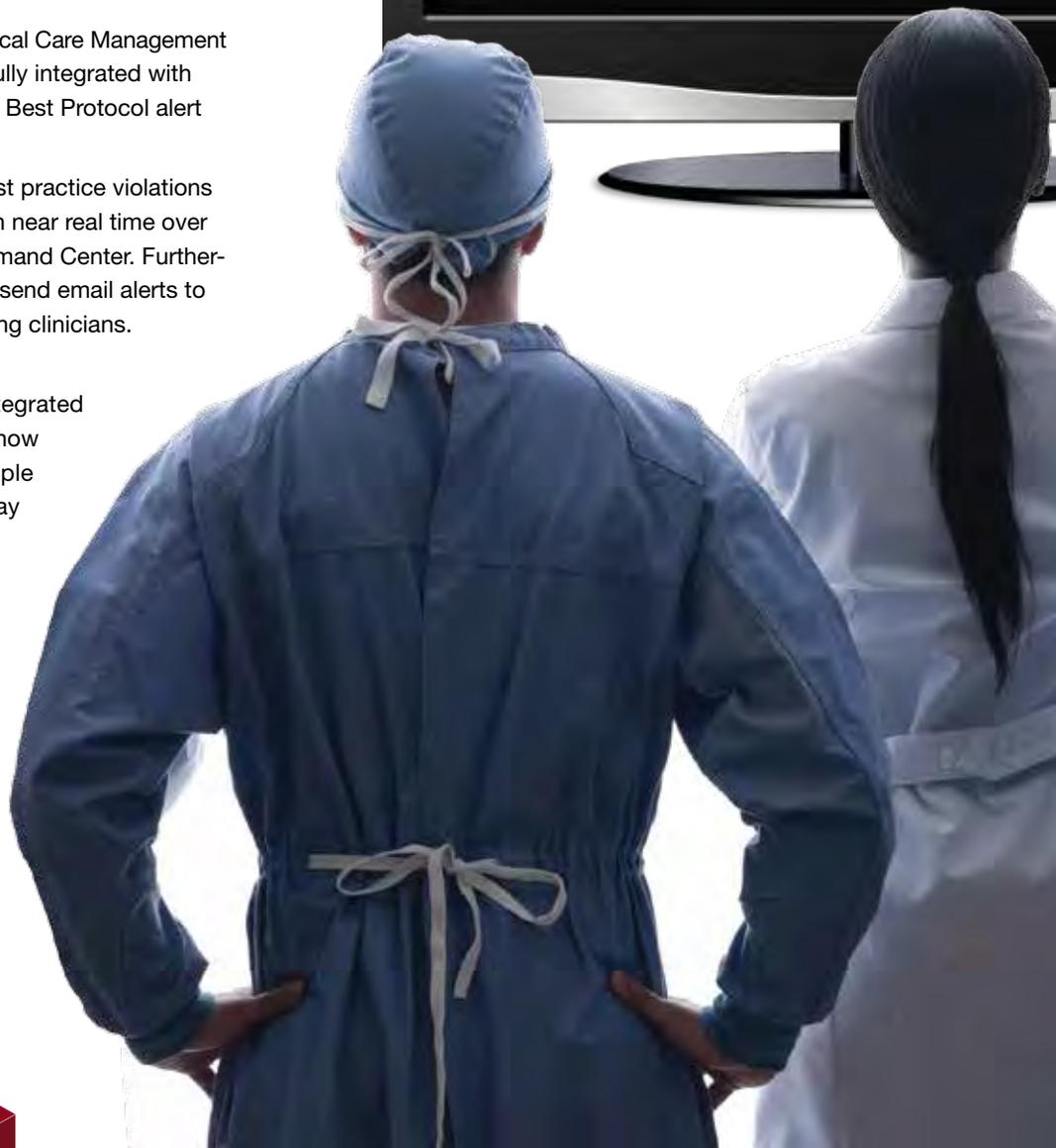
A critical part of Spectrum Medical's Critical Care Management Solution is LIVE VUE's capability to be fully integrated with our Best Practice's and Evidence Based Best Protocol alert system.

Non-compliant activity in the form of best practice violations or parameter alerts are communicated in near real time over the VISION network to LIVE VUE's Command Center. Furthermore, LIVE VUE can be programmed to send email alerts to both attending physicians and supervising clinicians.

LIVE VUE Configuration & Design

At the system level, LIVE VUE, using integrated configuration tools, is highly flexible in how patient specific data is presented. Multiple applications can be configured to display information that's clinically relevant to the specialty.

Accessing and working with near real time clinical information has never been easier.





LIVE VUE
INDEPENDENT DATA MANAGEMENT



Patient Safety and Decision Support are significantly enhanced with remote access to real time clinical data from either a VIPER Workstation, VIPER Tablet or PC.



Viper Tablet



The Critical Care Management Solution

Supporting Best Practice and Evidence Based Medicine

Spectrum Medical provides an IT solution that pro-actively supports the complex requirements of the Critical Care environment.

This toolbox allows the clinician to identify adverse events before they become adverse outcomes.

Evidence Based and Best Practice Protocols

Support of Best Practice and Evidence Based Protocols are the basis of Spectrum Medical's philosophy. Our newly developed VIPER applications support the creation of care driven protocols for near real time management of Best Practice and time driven Evidence Based protocols.

Clinical administrators can easily configure an unlimited range of Best Practice and Evidence Based Protocols. These protocols can be configured to be patient, physician or procedure specific and can be modified at any time as new evidence points to more optimized patient outcomes.

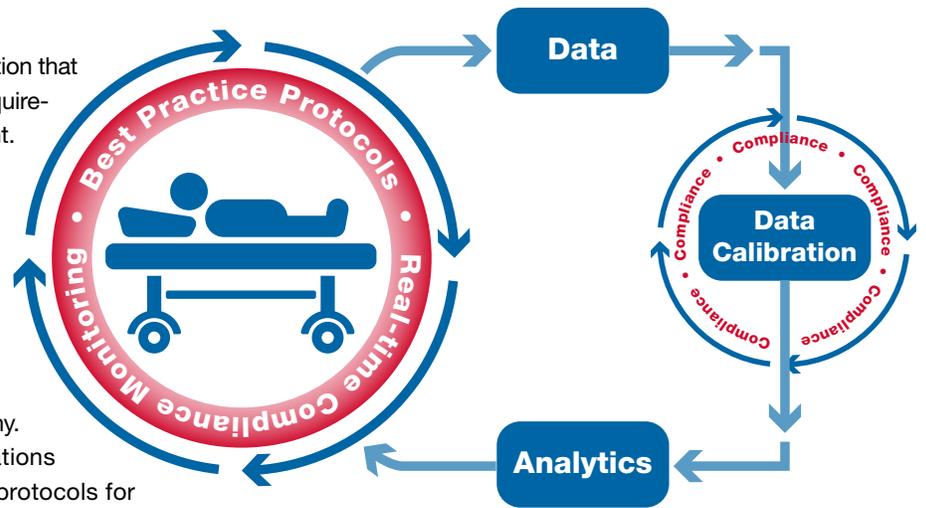
Best Practice Violations & Ongoing Compliance

Near real-time compliance reporting systems combined with various Best Practice and Evidenced Based Protocol Apps provide a flexible approach to the consistent delivery of quality and safe patient care.

- The functionality of Spectrum Medical's technology ensures that clinicians are made aware of best practice violations as they happen and in near real time.
- Intra-case compliance tools ensure that non-compliance data can be analyzed in near real time during clinically relevant time periods, such as change of shift or following clinical interventions.

Medication Decision Support

With continuous commitment to improve Clinical Decision Support Spectrum Medical has formed a partnership with First Databank a recognized leader in the provision of "advanced medication decision support systems" at the point of decision. Using FDB's cloud connect solution Spectrum Medical can now facilitate the provision of real time mission critical support for "drug to drug" and "drug to allergy" checking as well as access to a highly stable best practices-based medication vocabulary.



Comprehensive Data & Compliance Analytics

The use of analytics is an essential element to the quality improvement process and wholly dependent on having access to clinical data across large patient populations.

The Critical Care Management Solution permits clinical interventions and diagnostic data to be continuously uploaded to the server database application.

The use of data and subsequent analytics is a two stage process:

Compliance & Data Calibration

It is essential that department heads and administrators have access to tools to gauge compliance to Best Practice initiatives. To effectively improve Best Practices for both outcomes and patient safety, it is important to determine the level of clinical compliance. The analysis of overall compliance is in fact a "data calibration process" to determine the usefulness and value of the collected clinical data. Spectrum Medical provides a range of tools that allow compliance to be measured by Hospital, Department, Procedure and individual Best Practice Protocols.

Data & Analytics

Calibrated data can be used to analyze outcomes and trends for an individual patient or patient population. The output from such a process could lead to the modification of existing, or the addition of new Clinical Best Practices and Evidence Based initiatives.

Hardware Specifications for the VIPER Workstation

Software

OS	Windows Embedded Standard 7
Application Code	Spectrum Medical proprietary System M and VIPER application code.

Electronics

Main Processor	Intel Atom D2550 dual-core 1.86 GHz
RAM	2GB
On Board Storage	20GB solid state fixed drive
External Removable Storage	2GB (or greater) Secure Digital Card

Display

Size	15" Portrait
Resolution	1024x768 (XGA)
Backlight	LED
Touchscreen	Projected Capacitive (PCAP)

Power

Power Supply	Input: 90-264 VAC @47-63Hz, Output: 15VDC @5.67A
Battery	11.25V 8850mAh Li-ion, Run-time: 120 minutes

Communications

Serial	4 – selectable RS232 / RS485
USB	4 – USB 2.0
Wired LAN	2 – 10/100Mbps
WiFi	1 – 802.11a/b/g/n compatible, dual-band 2.4/5 GHz, dual-antenna

Mechanical

Dimensions	300mm x 375mm x 68mm
Weight	5kg
Housing	Aluminum

VISION Server Installation Requirements

Software

OS	Microsoft Windows Server 2008 (R2 or greater)
Database	Microsoft SQL Server 2008 (R2 or greater) Standard Edition (with Microsoft SQL Server Reporting Services)
Internet Services	IIS Version 7 or later required
.NET framework	Version 4.0 or later

Hardware

Main Processor	Intel Dual Core - 2 GHz minimum
RAM requirements	4.0GB minimum

Disc Storage Requirements

OS and applications	10GB (reserved for Windows and applications)
Case Storage	100 GB (10MB / Case, 1000 cases / year x 10 years)

Input and Output Requirements

Display	Standard Monitor
Keyboard / Mouse	Standard Keyboard and Mouse
Wired LAN	10/100Mbps LAN connection required

Printers

VISION will require either a local connected printer or at least one network printer setup.

Miscellaneous Items

RS232 to WiFi	Moxa NPort W2250 Plus
RS232 to USB	Digi Edgeport
Barcode Scanner	Symbol DS6707 scanner
Device Cables	Where required Spectrum can supply all cables needed to connect



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Registered to:
ISO 9001:2008
ISO 13485:2003
File No. A14554

SMM-003 – Version 3

