

# Welch Allyn<sup>®</sup> RScribe<sup>™</sup>

12-LEAD electrocardiograph SYSTEM  
USER MANUAL

Manufactured by Welch Allyn, Inc. Skaneateles Falls, NY U.S.A.



**CAUTION:** *Federal law restricts this device to sale by or on the order of a physician.*

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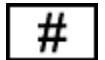
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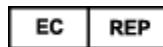


901127 ELECTROCARDIOGRAPH



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# NOTICES

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## Manufacturer's Responsibility

Welch Allyn, Inc. is responsible for the effects on safety and performance only if:

- Assembly operations, extensions, readjustments, modifications, or repairs are carried out only by persons authorized by Welch Allyn, Inc.
- The device is used in accordance with the instructions for use.

## Responsibility of the Customer

The user of this device is responsible for ensuring the implementation of a satisfactory maintenance schedule. Failure to do so may cause undue failure and possible health hazards.

## Equipment Identification

Welch Allyn, Inc. equipment is identified by a serial and reference number on the back of the device. Care should be taken so that these numbers are not defaced. Software equipment is accompanied by an identification card; carefully store this card as the information is needed for activation, upgrade and customer service.

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## Notice to EU Users and/or Patients:

Any serious incident that has occurred in relation to the device, should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

# WARRANTY INFORMATION

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## Your Welch Allyn Warranty

WELCH ALLYN, INC. (hereafter referred to as “Welch Allyn”) warrants that components within Welch Allyn products (hereafter referred to as “Product/s”) will be free from defects in workmanship and materials for the number of years specified on documentation accompanying the product, or previously agreed to by the purchaser and Welch Allyn, or if not otherwise noted, for a period of thirteen (13) months from the date of shipment.

Consumable, disposable or single use products such as, but not limited to, PAPER or ELECTRODES are warranted to be free from defects in workmanship and materials for a period of 90 days from the date of shipment or the date of first use, whichever is sooner.

Reusable product such as, but not limited to, BATTERIES, BLOOD PRESSURE CUFFS, BLOOD PRESSURE HOSES, TRANSDUCER CABLES, Y-CABLES, PATIENT CABLES, LEAD WIRES, MAGNETIC STORAGE MEDIUMS, CARRY CASES or MOUNTS, are warranted to be free from defects in workmanship and materials for a period of 90 days. This warranty does not apply to damage to the Product/s caused by any or all of the following circumstances or conditions:

- a) Freight damage;
- b) Parts and/or accessories of the Product/s not obtained from or approved by Welch Allyn;
- c) Misapplication, misuse, abuse, and/or failure to follow the Product/s instruction sheets and/or information guides;
- d) Accident; a disaster affecting the Product/s;
- e) Alterations and/or modifications to the Product/s not authorized by Welch Allyn;
- f) Other events outside of Welch Allyn’s reasonable control or not arising under normal operating conditions.

THE REMEDY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT WITHOUT CHARGE FOR LABOR OR MATERIALS, OR ANY PRODUCT/S FOUND UPON EXAMINATION BY WELCH ALLYN TO HAVE BEEN DEFECTIVE. This remedy shall be conditioned upon receipt of notice by Welch Allyn of any alleged defects promptly after discovery thereof within the warranty period. Welch Allyn’s obligations under the foregoing warranty will further be conditioned upon the assumption by the purchaser of the Product/s (i) of all carrier charges with respect to any Product/s returned to Welch Allyn’s principal place or any other place as specifically designated by Welch Allyn or an authorized distributor or representative of Welch Allyn, and (ii) all risk of loss in transit. It is expressly agreed that the liability of Welch Allyn is limited and that Welch Allyn does not function as an insurer. A purchaser of a Product/s, by its acceptance and purchase thereof, acknowledges and agrees that Welch Allyn is not liable for loss, harm, or damage due directly or indirectly to an occurrence or consequence there from relating to the Product/s. If Welch Allyn should be found liable to anyone under any theory (except the expressed warranty set forth herein) for loss, harm, or damage, the liability of Welch Allyn shall be limited to the lesser of the actual loss, harm, or damage, or the original purchase price of the Product/s when sold.

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## USER SAFETY INFORMATION

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**WARNING:** Means there is the possibility of personal injury to you or others.



**Caution:** Means there is the possibility of damage to the device.

**Note:** Provides information to further assist in the use of the device.

*NOTE: This manual may contain screen shots and pictures. Any screen shots and pictures are provided for reference only. Consult the actual screen in the host language for specific wording.*



### **WARNINGS**

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1. This manual gives important information about the use and safety of this device. Deviating from operating procedures, misuse or misapplication of the device, or ignoring specifications and recommendations could result in increased risk of harm to users, patients and bystanders, or damage to the device.
2. Device captures and presents data reflecting a patient's physiological condition that when reviewed by a trained physician or clinician can be useful in determining a diagnosis; however, the data should not be used as a sole means for determining a patient's diagnosis.
3. Users are expected to be licensed clinical professionals knowledgeable about medical procedures and patient care, and adequately trained in the use of this device. Before attempting to use this device for clinical applications, the operator must read and understand the contents of the user manual and other accompanying documents. Inadequate knowledge or training could result in increased risk of harm to users, patients and bystanders, or damage to the device. Contact Welch Allyn service for additional training options.
4. To maintain designed operator and patient safety, peripheral equipment and accessories used that can come in direct patient contact must be in compliance with UL 60601-1, IEC 60601-1, and IEC 60601-2-25. Only use parts and accessories supplied with the device and available through Welch Allyn, Inc.
5. Patient cables intended for use with the device include series resistance (9 Kohm minimum) in each lead for defibrillation protection. Patient cables should be checked for cracks or breakage prior to use.
6. Conductive parts of the patient cable, electrodes, and associated connections of type CF applied parts, including the neutral conductor of the patient cable and electrodes, should not come into contact with other conductive parts including earth ground.
7. Do not attempt to clean the patient cables by submersing into a liquid, autoclaving, or steam cleaning as this may damage equipment or reduce its usable life. Wipe the exterior surfaces with a warm water and mild detergent solution and then dry with a clean cloth. Use of unspecified cleaning/disinfecting agents, failure to follow recommended procedures, or contact with unspecified materials could result in increased risk of harm to users, patients and bystanders, or damage to the device.
8. The device is part of an integral personal computer-based diagnostic system. The user must adhere to all warnings in order to ensure safe and reliable performance.
9. If operated on AC (~) power, the personal computer must be connected with its original power cable to an electrical installation that complies with applicable regulations for environments where patients are treated.
10. The personal computer used and any peripheral devices connected to it must be approved to the appropriate safety standard for nonmedical information technology equipment per IEC 60950, or its national variants. The personal computer and any peripheral devices connected to it, being non-medical electrical equipment, must be

situated outside the patient environment per IEC 60601-1-1. To ensure the safety of the patient it must not be possible for the operator to touch the patient and the computer at the same time. In general, at least 1.5 meters (5') of open area must surround the patient to achieve this.

11. If the personal computer is situated within the patient environment, ensure that its level of safety is that of medical electrical equipment per IEC 60601-1. This may be accomplished by powering the computer and any other equipment connected to it through an isolation transformer or by operating on battery power.
12. If the personal computer is situated within the patient environment, to maintain designed operator and patient safety when a LAN network connection is being used, the network cable must be connected to the device through an Ethernet isolator module that complies with IEC 60601-1-1 (available from Welch Allyn).
13. ECG electrodes could cause skin irritation; patients should be examined for signs of irritation or inflammation. Electrode materials and ingredients are specified on the packaging or are available from the vendor upon request.
14. To avoid the possibility of serious injury or death during patient defibrillation, do not come into contact with device or patient cables. Additionally, proper placement of defibrillator paddles in relation to the electrodes is required to minimize harm to the patient.
15. Proper clinical procedure must be employed to prep the electrode sites and to monitor the patient for excessive skin irritation, inflammation, or other adverse reactions. Electrodes are intended for short-term use and should be removed from the patient promptly following testing. Do not mix electrodes made of dissimilar metals.
16. To avoid potential for spread of disease or infection, single-use disposable components (e.g., electrodes) must not be reused. To maintain safety and effectiveness, electrodes must not be used beyond their expiration date.
17. A possible explosion hazard exists. Do not use the device in the presence of flammable anesthetic mixture.
18. Possible malfunction risks may be present when installing third-party software. Welch Allyn, Inc. cannot verify the compatibility of all possible hardware/software combinations.
19. The device has not been designed for use with high-frequency (HF) surgical equipment and does not provide a protective means against hazards to the patient.
20. When the 40 Hz filter is used, the frequency response requirement for diagnostic ECG equipment cannot be met. The 40 Hz filter significantly reduces high-frequency components of the ECG and pacemaker spike amplitudes, and is recommended only if high-frequency noise cannot be reduced by proper procedures.
21. The quality of the signal produced by the device may be adversely affected by the use of other medical equipment, including but not limited to defibrillation and ultrasound machines.
22. Use only recommended alkaline battery cells with WAM™. Use of other cells may present a risk of fire or explosion.
23. The WAM low battery warning function is designed for alkaline battery cells only. Use of other cells may result in failure of the low battery warning possibly resulting in a malfunction of the device.
24. Test Rscribe functions after each Microsoft critical and security update with a simulator prior to patient use.
25. Damaged or suspected inoperative equipment must be immediately removed from use and must be checked/repaired by qualified service personnel prior to continued use.

26. To prevent emission of substances that may damage the environment, dispose of the device, its components and accessories (e.g., batteries, cables, electrodes), and/or packing materials that are past the shelf life in accordance with local regulations.
27. When necessary, dispose of the device, its components and accessories (e.g., batteries, cables, electrodes), and/or packing materials in accordance with local regulations.
28. Proper functioning backup items such as a spare patient cable, display monitor, and other equipment are recommended on hand to prevent delayed treatment due to an inoperable device.



### **Caution**

1. Do not pull or stretch patient cables as this could result in mechanical and/or electrical failures. Patient cables should be stored after forming them into a loose loop.
2. Proper functioning backup items such as a spare patient cable, front-end device, display monitor, and other equipment are recommended on hand to prevent delayed treatment due to an inoperable device.
3. Windows compatibility, updates and anti-virus policy: The RScripte™ software has been fully tested with Windows 7 Professional Service Pack 1, Windows 8.1 Professional, and Windows 10 Pro operating systems. The RScripte software has also been tested with Windows Server 2008 R2 Service Pack 1 and Windows Server 2012 R2. Although it is unlikely that Windows updates and security patches affect RScripte functionality, Welch Allyn recommends turning automatic Windows update off, and periodically running it manually. A functional test should be executed after update, which includes acquiring a recording, editing measurements and printing a report, as well as importing an order and exporting results, if activated. Compatibility of RScripte with corporate anti-virus software packages has been evaluated. Welch Allyn recommends excluding the RScripte database folder (Normally C:\ProgramData\MiPgSqlData on a stand-alone system or the server) from the folders to be scanned. In addition, anti-virus patch updates and system scans should be scheduled for time periods when the system is not actively in use or performed manually.
4. No other non-recommended PC application software should be running while the RScripte application is being used.
5. It is recommended that all resting ECG workstations and review stations be periodically updated with Microsoft critical and security updates to protect from malware attacks and to fix critical Microsoft software issues.
6. To prevent delivery of malware into the system Welch Allyn recommends that institution operating procedures are written to prevent malware to be transmitted into the system from removable media.
7. The WAM will only work with receiving devices that are equipped with the appropriate option.
8. This WAM is not recommended for use in the presence of imaging equipment such as Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) devices, etc.
9. The following equipment may cause interference with the WAM RF channel: microwave ovens, diathermy units with LANs (spread spectrum), amateur radios, and government radar.
10. AA batteries are known to leak their contents when stored in unused equipment. Remove battery from WAM when not used for an extended period of time.

11. Be careful to insert the correct lead wire into the connector block with the appropriate input connector by matching the lead wire labels to the WAM or AM12 lead labels.

## Notes

1. Local Administrator permissions are required for software installation, application configuration, and software activation. Local User privileges are required for application users. Roaming and temporary accounts are not supported.
2. 8-hour timeout expiration is automatically controlled by the system. Each operation that occurs (e.g. Exam Search, Patient Search, editing exams, starting an exam, etc.) will reset the timeout start time. When there is no interaction with the system for the timeout duration, the user is prompted to enter login information.
3. When the server is unavailable in a distributed configuration, the client workstation will notify the user with a prompt to proceed in Offline Mode or cancel. Scheduled orders are not available. An exam can be conducted with manually entered demographics and will be stored locally. When the server comes available, the user is prompted with a list of unsent exams and a selection to send exams to the modality manager database.
4. Patient movements may generate excessive noise that may affect the quality of the ECG traces and the proper analysis performed by the device.
5. Proper patient preparation is important to proper application of ECG electrodes and operation of the device.
6. There is no known safety hazard if other equipment, such as pacemakers or other stimulators, is used simultaneously with the device; however, disturbance to the signal may occur.
7. If an electrode is not properly connected to the patient, or one or more of the patient cable lead wires is damaged, the display will indicate a lead fault for the lead(s) where the condition is present.
8. A thick baseline presentation on the display while using the AM12 may be due to a calibration error. Review the LED indicator on the AM12 to ensure the unit is connected, or disconnect and reconnect to the PC USB port to re-calibrate.
9. The WAM will automatically start flashing LEDs if the batteries have been discharged below 1.0 volts.
10. During normal WAM/AM12 operation, the green LED will display continuously.
11. If the WAM battery cover is opened during transmission, the device will stop transmitting. The battery must be reinserted and the cover must be applied to resume operation.
12. The WAM will automatically turn off (LEDs off) if the battery has been severely discharged.
13. The WAM will automatically turn off when the electrocardiograph is powered down.
14. The WAM will automatically turn off after being disconnected from the patient. This will happen regardless of RScribe battery/AC power state.
15. A thick baseline presentation on the display while using the WAM may be due to the WAM being turned off, having no battery, not being paired correctly, operating out of range, or due to a calibration error. Review the LED indicator and auditory advisory on the WAM to ensure the unit is turned on, has proper battery level, is paired correctly, and is within recommended proximity of the electrocardiograph, or power cycle the WAM to re-calibrate.
16. As defined by IEC 60601-1 and IEC 60601-2-25, the device is classified as follows:
  - Type CF, defibrillation-proof applied parts.

If not specifically indicated otherwise, personal computer equipment used with the device can be regarded as:

- Class I (if the computer has a three-prong power inlet) or class II (if it has a two-prong inlet)
- Ordinary equipment.
- Equipment not suitable for use in the presence of a flammable anesthetic mixture.
- Continuous operation.

17. To prevent possible damage to the device during transport and storage (while in original packaging) the following environmental conditions must be adhered to:

Ambient temperature: -20° C to 65° C (-4° F to 149° F)  
Relative humidity: 10% to 95%, non-condensing

18. Allow the device and any computer equipment used to stabilize within its intended operating environment for a minimum of two hours prior to use. Refer to the computer equipment user manual for allowable environmental conditions. The allowable environmental conditions for the AM12 and WAM acquisition modules are as follows:

Ambient temperature: 10° C to 40° C (50° F to 104° F)  
Relative humidity: 10% to 95%, non-condensing

19. The WAM is UL classified:



WITH RESPECT TO ELECTRIC SHOCK,  
FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH  
UL2601-1, IEC60601-1, CAN/CSA CC22.2 No. 601.1, IEC60601-2-25,

# EQUIPMENT SYMBOLS AND MARKINGS

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## Symbol Delineation



**WARNING** The warning statements in this manual identify conditions or practices that could lead to illness, injury, or death. In addition, when used on a patient applied part, this symbol indicates defibrillation protection is in the cables. Warning symbols will appear with a grey background in a black and white document.



**CAUTION** The caution statements in this manual identify conditions or practices that could result in damage to the equipment or other property, or loss of data.



PC

USB connection to PC



Defibrillator-proof type CF applied part



Do not dispose as unsorted municipal waste. Requires separate handling for waste disposal according to local requirements



Indicates compliance to applicable European Union directives



Non-ionizing electromagnetic radiation



Follow instructions/directions for use (DFU) -- mandatory action. A copy of the DFU is available on this website. A printed copy of the DFU can be ordered from Welch Allyn for delivery within 7 calendar days.



Consult directions for use (DFU). A copy of the DFU is available on this website. A printed copy of the DFU can be ordered from Welch Allyn for delivery within 7 calendar days



Medical Device



Model Identifier



Reorder Number

**NOTE:** Refer to the manual(s) accompanying the device that pertain to the computer hardware for additional definitions of symbols that may be present.

## Package Symbol Delineation



This side up



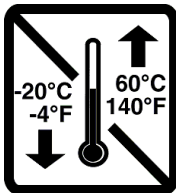
Fragile



Keep Dry



Keep Away from Heat



Acceptable Temperature Range

# GENERAL CARE

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## Precautions

- Turn off the device before inspecting or cleaning.
- Do not immerse the device in water.
- Do not use organic solvents, ammonia based solutions, alcohol, or abrasive cleaning agents which may damage equipment surfaces.

## Inspection

Inspect your equipment daily prior to operation. If you notice anything that requires repair, contact an authorized service person to make the repairs.

- Verify that all cords and connectors are securely seated.
- Check the case and chassis for any visible damage.
- Inspect cords and connectors for any visible damage.
- Inspect keys and controls for proper function and appearance.

## Cleaning and Disinfecting

1. Disconnect the power source. Remove cables and lead wires from device before cleaning.
2. For general cleaning of cables and lead wires, use a soft, lint-free cloth lightly moistened with a mild soap and water solution. Wipe and air dry.
3. For disinfecting the exterior surfaces of the device, patient acquisition module, cables, and lead wires, wipe exterior using:

Clorox Healthcare® Bleach Germicidal Wipes (use according to instructions on product label), or

a soft, lint-free cloth with a solution of Sodium Hypochlorite (10% household bleach and water solution) minimum 1:500 dilution (minimum 100 ppm free chlorine) and maximum 1:10 dilution as recommended by the APIC Guidelines for Selection and Use of Disinfectants



**WARNING:** Prevent liquid from penetrating the device and do not attempt to clean/disinfect the device or patient cables by submerging into a liquid, autoclaving, or steam cleaning. Never expose cables to strong ultra-violet radiation. Do not sterilize the device or ECG lead wires with Ethylene Oxide (EtO) gas.



**WARNING:** Use of unspecified cleaning/disinfecting agents or failure to follow recommended procedures could result in increased risk of harm to users, patients and bystanders, or damage to the device.

## Disposal

This product and its accessories must be disposed of according to local laws and regulations. Do not dispose of this product as unsorted municipal waste. For more specific disposal information see [www.welchallyn.com/weee](http://www.welchallyn.com/weee).



## **ELECTROMAGNETIC COMPATIBILITY (EMC)**

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Electromagnetic compatibility with surrounding devices should be assessed when using the device.

An electronic device can either generate or receive electromagnetic interference. Testing for electromagnetic compatibility (EMC) has been performed on the device according to the international standard for EMC for medical devices (IEC 60601-1-2). This IEC standard has been adopted in Europe as the European Norm (EN 60601-1-2).

The device should not be used adjacent to, or stacked on top of other equipment. If the device must be used adjacent to or stacked on top of other equipment, verify that the device operates in an acceptable manner in the configuration in which it will be used.

Fixed, portable, and mobile radio frequency communications equipment can affect the performance of medical equipment. See the appropriate EMC table for recommended separation distances between the radio equipment and the device.

The use of accessories, transducers, and cables other than those specified by Welch Allyn may result in increased emissions or decreased immunity of the equipment.

### Guidance and Manufacturer's Declaration: Electromagnetic Emissions

The equipment is intended for use in the electromagnetic environment specified in the table below. The customer or the user of the equipment should ensure that it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment: Guidance
RF Emissions CISPR 11	Group 1	The equipment uses RF energy only for its internal function. Therefore, its RF emissions are very low and not likely to cause any interference in nearby electronic equipment.
RF Emissions CISPR 11	Class A	
Harmonic Emissions IEC 61000-3-2	Complies	
Voltage Fluctuations/ Flicker Emissions IEC 61000-3-3	Complies	

### Guidance and Manufacturer's Declaration: Electromagnetic Immunity


The equipment is intended for use in the electromagnetic environment specified in the table below. The customer or the user of the equipment should ensure that it is used in such an environment.

Emissions Test	Compliance	Compliance Level	Electromagnetic Environment: Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	+/- 6 kV contact +/- 8 kV air	+/- 6 kV contact +/- 8 kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	+/- 2 kV for power supply lines +/- 1 kV for input/output lines	+/- 2 kV for power supply lines +/- 1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	+/- 1 kV differential mode +/- 2 kV common mode	+/- 1 kV differential mode +/- 2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions, and voltage variations on power supply input lines IEC 61000-4-11	<5% UT (>95% dip in UT) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycles	<5% UT (>95% dip in UT) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycles	Mains power quality should be that of a typical commercial or hospital environment.
Power frequency (50/60 Hz) magnetic field	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

**NOTE:** UT is the AC Mains voltage prior to application of the test level.

## Guidance and Manufacturer's Declaration: Electromagnetic Immunity

The equipment is intended for use in the electromagnetic environment specified in the table below. The customer or the user of the equipment should ensure that it is used in such an environment.

Emissions Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment: Guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms 150 kHz to 80 MHz	<p>Portable and mobile RF communications equipment should be used no closer to any part of the equipment, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p><b>Recommended separation distance</b></p> $d = \left[ \frac{3.5}{3V_{rms}} \right] \sqrt{P}$ $d = \left[ \frac{3.5}{3V/m} \right] \sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = \left[ \frac{7}{3V/m} \right] \sqrt{P} \quad 800 \text{ MHz to } 2.5 \text{ GHz}$ <p>Where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <math>d</math> is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey<sup>a</sup>, should be less than the compliance level in each frequency range<sup>b</sup>.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m 80 MHz to 2.5 GHz	

- a. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radios, AM and FM radio broadcast, and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the equipment is used exceeds the applicable RF compliance level above, the equipment should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the equipment.
- b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than [3] V/m.

## Recommended Separation Distances Between Portable and Mobile RF Communications Equipment and the Equipment

The equipment is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the equipment can help to prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the equipment as recommended in the table below, according to the maximum output power of the communications equipment.

Rated Maximum Output Power of Transmitter W	Separation Distance According to Frequency of Transmitter (m)	
	150 KHz to 800 MHz	800 MHz to 2.5 GHz
	$d = 1.2\sqrt{P}$	$d = 2.3\sqrt{P}$
0.01	0.1 m	0.2 m
0.1	0.4 m	0.7 m
1	1.2 m	2.3 m
10	4.0 m	7.0 m
100	12.0 m	23.0 m

For transmitters rated at a maximum output power not listed above, the recommended separation distance  $d$  in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where  $P$  is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

**NOTE 1:** At 800 MHz, the separation distance for the higher frequency range applies.

**NOTE 2:** These guidelines may not apply in all situations. Electromagnetic propagation is affected by the absorption and reflection from structures, objects, and people.

## Regulatory Radio Compliance

### Federal Communications Commission (FCC)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the distance between the equipment and the receiver
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

The user may find the following booklet prepared by the Federal Communications Commission helpful: The Interference Handbook This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 004-000-0034504. Welch Allyn is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this Welch Allyn product, or the substitution or attachment of connecting cables and equipment other than specified by Welch Allyn. The correction of interference caused by such unauthorized modification, substitution, or attachment will be the responsibility of the user.

WLAN
B&B electronics <sup>1</sup> WLNN-SP-MR551 (Radio module 9373)
FCC ID: F4AWLNN551
<sup>1</sup> Manufacturer also called B+B SmartWorx

## Industry Canada (IC) Emissions

### *RF Radiation Hazard Warning*

Using higher gain antennas and types of antennas not certified for use with this product is not allowed. The device shall not be co-located with another transmitter.

Cet avertissement de sécurité est conforme aux limites d'exposition définies par la norme CNR-102 at relative aux fréquences radio.

This device complies with RSS 210 of Industry Canada.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device.

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes: (1) il ne doit pas produire de brouillage et (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conform à la norme NMB-003 du Canada.

WLAN
B&B electronics <sup>1</sup> WLNN-SP-MR551 (Radio module 9373) IC: 3913A-WLNN551 <sup>1</sup> Manufacturer also called B+B SmartWorx

### **Declaración de conformidad Mexico**

La operación de este equipo está sujeta a las siguientes dos condiciones:

1. es posible que este equipo o dispositivo no cause interferencia perjudicial y este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

## European Union

Czech	Welch Allyn tímto prohlašuje, že tento WLAN device je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 2014/53/ES.
Danish	Undertegnede Welch Allyn erklærer herved, at følgende udstyr WLAN device overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EF
Dutch	Bij deze verklaart Welch Allyn dat deze WLAN device voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 2014/53/EC.
English	Hereby, Welch Allyn, declares that this WLAN device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EC.
Estonian	Käesolevaga kinnitab Welch Allyn seadme WLAN device vastavust direktiivi 2014/53/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Finnish	Welch Allyn vakuuttaa täten että WLAN device tyyppinen laite on direktiivin 2014/53/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
French	Par la présente, Welch Allyn déclare que ce WLAN device est conforme aux exigences essentielles et aux autres dispositions de la directive 2014/53/CE qui lui sont applicables
German	Hiermit erklärt Welch Allyn die Übereinstimmung des Gerätes WLAN device mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 2014/53/EG. (Wien)
Greek	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Welch Allyn ΔΗΛΩΝΕΙ ΟΤΙ WLAN device ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/EK
Hungarian	Alulírott, Welch Allyn nyilatkozom, hogy a WLAN device megfelel a vonatkozó alapvető követelményeknek és az 2014/53/EC irányelv egyéb előírásainak.
Italian	Con la presente Welch Allyn dichiara che questo WLAN device è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/CE.
Latvian	Ar šo Welch Allyn deklarē, ka WLAN device atbilst Direktīvas 2014/53/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lithuanian	Šiuo Welch Allyn deklaruoja, kad šis WLAN device atitinka esminius reikalavimus ir kitas 2014/53/EB Direktyvos nuostatas.
Malti	Hawnhekk, Welch Allyn, jiddikjara li dan WLAN device jikkonforma mal-htigijiet essenzjali u ma provvedimenti ohrajn relevanti li hemm fid-Dirrettiva 2014/53/EC
Portuguese	Welch Allyn declara que este WLAN device está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/CE.
Slovak	Welch Allyn týmto vyhlasuje, že WLAN device spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/ES.
Slovene	Šiuo Welch Allyn deklaruoja, kad šis WLAN device atitinka esminius reikalavimus ir kitas 2014/53/EB Direktyvos nuostatas.
Spanish	Por medio de la presente Welch Allyn declara que el WLAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/CE

Swedish      Härmed intygar Welch Allyn att denna WLAN device står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EG.



# INTRODUCTION

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## Manual Purpose

This manual is intended to provide the user with information about the RScribe resting electrocardiograph's display screen, menu structure, icons, and navigation tools pertaining in the following sections:

- Using RScribe
- Preparing the Patient
- Using MWL/Patients
- Record an ECG
- Context menus
- Exam Search
- System Settings

*NOTE: This manual contains screen images that are for illustration, and might be different in the actual product. Consult the actual screen in the host language for specific wording.*

## Audience

This manual is written for clinical professionals with a working knowledge of medical procedures and terminology as required for monitoring cardiac patients.

## Intended Use

The RScribe Electrocardiograph is a multi-channel electrocardiograph product used for acquiring, analyzing, displaying and printing resting ECG's. The RScribe is a 12-channel diagnostic electrocardiograph intended for recording and printing ECG's of adult and pediatric patients. The acquired ECG will be displayed for quality check purpose, analyzed using the Welch Allyn VERITAS resting interpretation, optionally printed, stored and/or transmitted to a ECG Management System or Hospital Information System. The device is not intended to be used as a vital signs physiological monitor.

It is a system comprised of a Welch Allyn ECG amplifier (Wireless Acquisition Module [WAM] or AM12 Patient Cable) and an off-the-shelf personal computer with Welch Allyn software application that allows clinicians to collect ECGs on patients during routine visits. The patient populations for which the device will be used may be healthy or diseased of any age. ECG's are taken with the patient in the supine position. The RScribe is intended to be used by a licensed health care practitioner in a hospital, medical clinic and offices of any size, including Clinical Research Organizations.

## Indications for Use

The RWrite electrocardiograph is a non-invasive prescription device.

- The device is indicated for use to acquire, analyze, display, transmit and print electrocardiograms.
- The device is indicated for use to provide interpretation of the data for consideration by a physician.
- The device is indicated for use in a clinical setting, by a physician or by trained personnel who are acting on the orders of a licensed physician. It is not intended as a sole means of diagnosis.
- The interpretations of ECG offered by the device are only significant when used in conjunction with a physician over-read as well as consideration of all other relevant patient data.
- The device is indicated for use on adult and pediatric populations.
- The device is not intended to be used as a vital signs physiological monitor.
- The device is not designed for out of hospital transport.
- The device is not designed for use in highly invasive environments, such as an operating theatre.

## System Description

RWrite is a multi-lead, diagnostic, computer-based resting electrocardiograph capable of acquiring, viewing, transmitting, printing, and storing ECG data.

RWrite models ordered with the VERITAS™ resting ECG interpretation algorithm option are capable of specific age and gender interpretation criteria. The VERITAS algorithm provides an over-reading physician with a silent second opinion through diagnostic statements displayed on the ECG report. For additional information on the VERITAS algorithm, please refer to the *Physician's Guide to VERITAS with Adult and Pediatric Resting ECG Interpretation* (see Accessories).

RWrite can be configured with bidirectional connectivity and DICOM® protocol support.

The RWrite application is integrated with a patient and exam management system that handles the scheduling of exams, database storage and maintenance, exam and patient search, printing, communication with external systems and dispatches the modality dependent acquisition and review functions. RWrite can be configured for data distribution. When so configured, the database resides on a server supporting a number of networked client workstations.

The RWrite Review software offers authorized users with the ability to schedule new exams when not linked to an external scheduling system, view reports, enter conclusions, and generate printed or electronic reports for completed exams.

The RWrite server, workstations, and review stations can be set up as Citrix® Application Servers for remote access from client computers with Citrix XenApp™ installed.

The RWrite supports print formats that include:

- Standard or Cabrera,
- 3+1,
- 3+3,
- 12,
- 6+6 channel in automatic mode;
- Single channel on one page (60 min of acquired ECG for rhythm strip (Full Disclosure) printing).

The RWrite packing list includes:

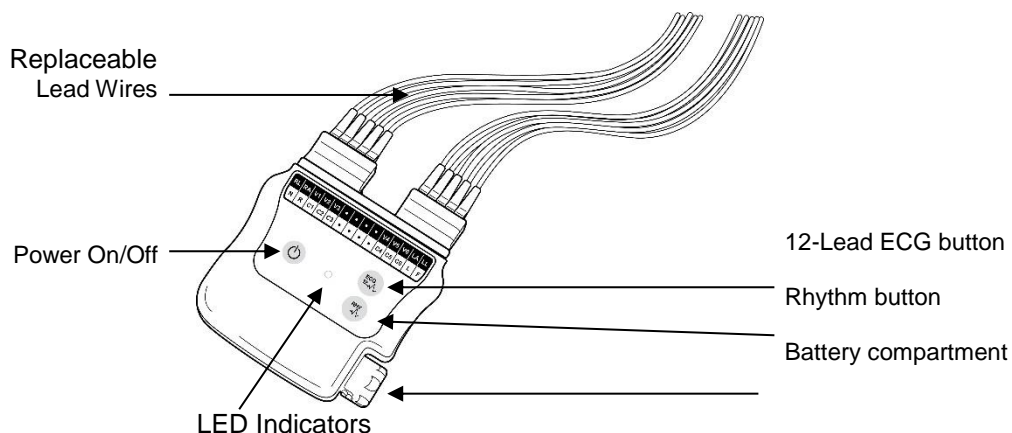
- Acquisition module with lead wire set and accessory starter kit
- Software CD
- Physician's Guide to VERITAS and User Manual PDFs on CD

## Acquisition Module Types

Two acquisition module types, the Wireless Acquisition Module (WAM) or AM12 patient cable, for ECG acquisition are used with RSCRIBE.

### WAM with Lead Wires

Figure 1 WAM with Lead Wires



The WAM incorporates frequency-hopping technology in the 2500 MHz frequency range with 40,000 Hz ECG acquisition and is operated by two buttons located on the front of the device when used with RSCRIBE:

1. Power On/Off
2. Acquiring a 12-lead ECG

**NOTE:** Rhythm button is non-functional for use with RSCRIBE.

The WAM uses one AA alkaline, 1.5V battery for approximately 8-hours of continuous operation.



**WARNING:** Use of other cells may present a risk of fire or explosion.

### USB Transceiver Key (UTK)

The UTK connected to the RSCRIBE USB port receives ECG signals from the paired WAM for presentation of the electrocardiogram. The UTK connected to USB cable (6400-015) from the PC port is positioned in an unobstructed location.

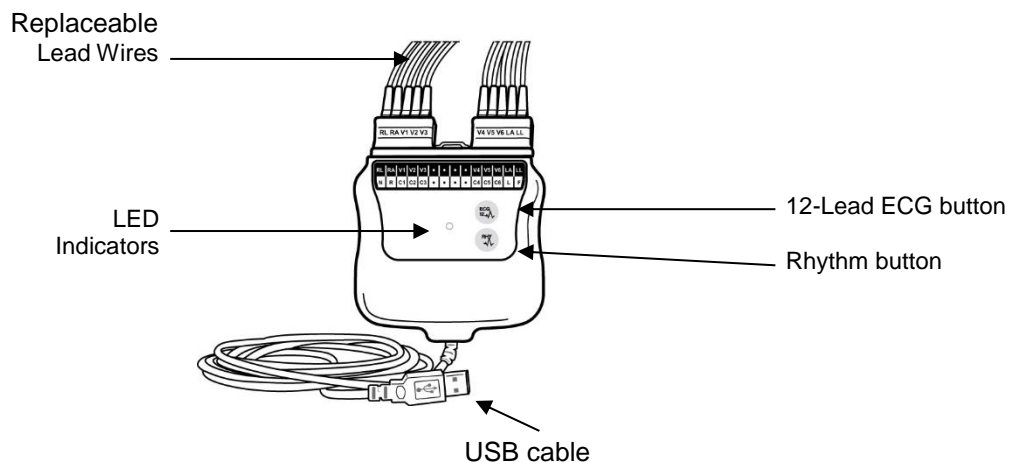


## WAM LED Indicators

LED	+ Audio	MODE
GREEN off YELLOW off	Intermittent beeping	WAM is on but not paired to an electrocardiograph, is out of range of the paired electrocardiograph.
YELLOW solid or flashing GREEN off		One or more leads are not connected properly.
GREEN solid YELLOW off		No lead fail condition is detected; battery is OK.
GREEN solid YELLOW off	Intermittent beeping	WAM is collecting a 10-second ECG.
Blinking LED (yellow or green depending on lead fault status)		WAM has detected a low battery condition. Replace the battery within 15 minutes.
GREEN off YELLOW off	1 second audio on, then device turns off.	WAM has detected a very low battery status and powered off.

## AM12 with Lead Wires

Figure 2 AM12 with Lead Wires



The AM12 is available for a traditional wired connection with direct USB connection and 40,000 Hz ECG acquisition. The 12-Lead ECG button can be used to acquire a 12-lead ECG at the patient's side.

**NOTE:** *Rhythm button is non-functional for use with RScript.*

## Lead Fail

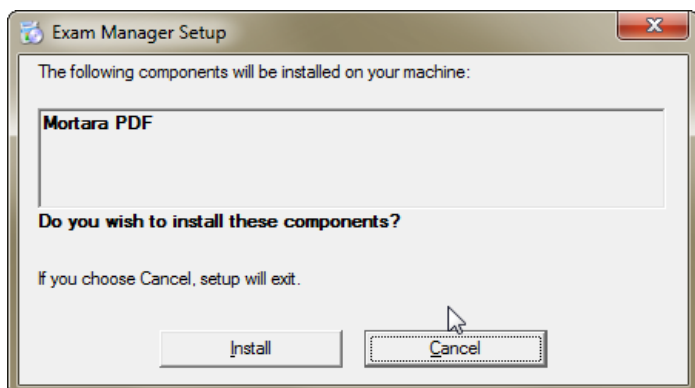
Lead fail is done automatically through visual communication with the LEDs located on the front of the WAM and AM12. A yellow LED (solid or flashing) indicates a lead fail condition is present. A solid green LED indicates proper lead connection as well as adequate WAM battery voltage for ECG acquisition.

## RWrite Software Installation Process

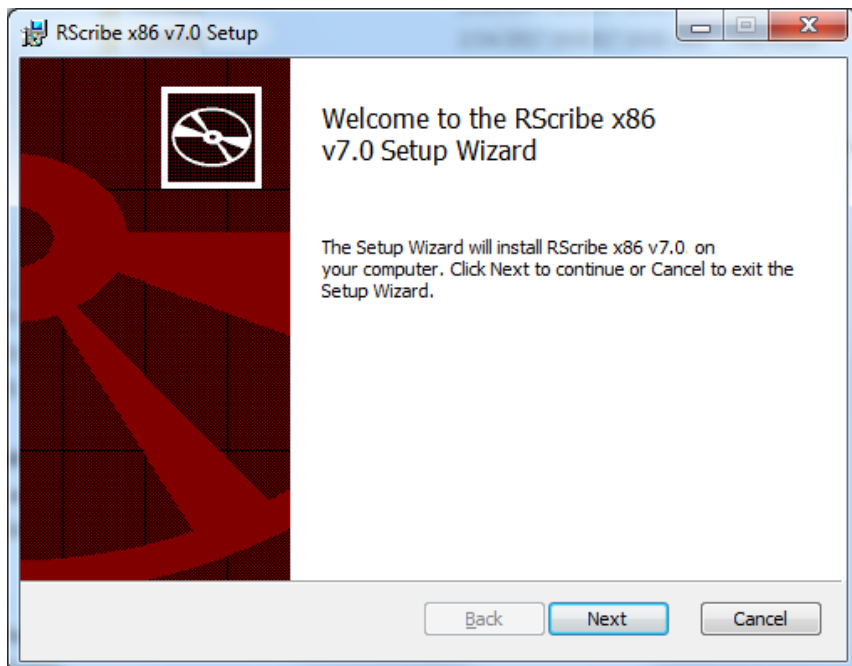
Navigate to the location of the software to be installed and double click on the “Setup” application file.

If asked, allow the program to make changes to the computer by clicking **Yes**.

The Exam setup window will appear prompting you to install Welch Allyn PDF, click **Install**.



The RWrite V7.x.x Setup window will appear, click **Next** to continue.



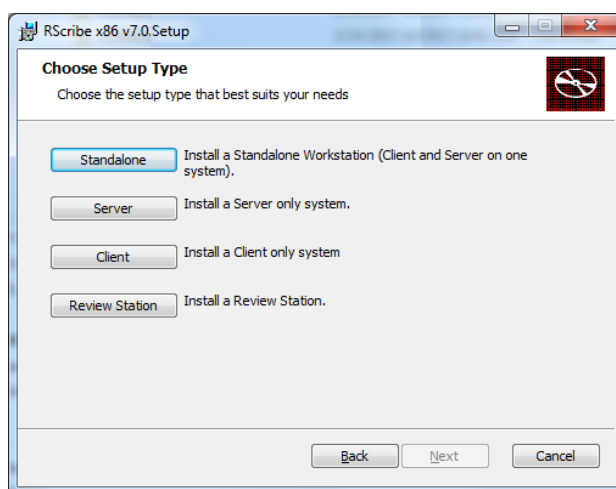
Select the appropriate Setup Type for the installation:

There are four installation choices that simplify the installation process.

**Standalone:** Choose the standalone option if you are loading a single RSCRIBE application with the Database Server functionality included on a single computer.

**Server:** This option allows for installations using multiple networked computers with the Database Server functionality loaded onto a separate computer or Server hardware platform.

**Client:** Choose this option if you are loading the RSCRIBE application on a computer that will be networked to the Database Server functionality on a different computer.

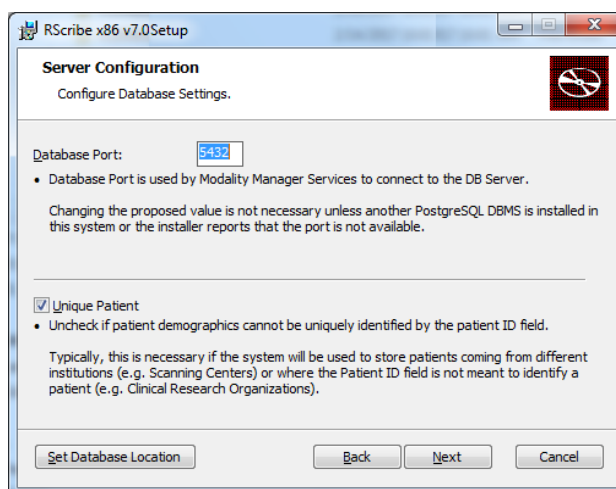


**Review Station:** Choose this option when loading the ability to review exams that are acquired on a networked computer, with the Database Server functionality already loaded onto a separate networked computer.

The Server Configuration window displays the default Database Port number (5432) and an option to enable or disable the Unique Patient option.

**Database Port:** It is recommended that you use the default port number for the installation. If the port is already in use the installation tool will alert the user that the port is already taken and that a new port number will need to be entered to continue with the installation.

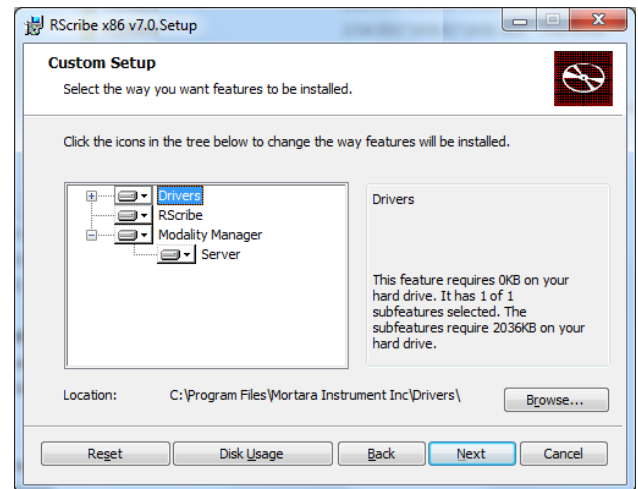
**Unique Patient:** This option defaults to an enabled (checked) condition to configure the system to utilize the Patient ID field as a unique identifier for patient demographic information. This is the system configuration most typically used.



The Unique Patient option box can be UNCHECKED to NOT use the Patient ID field as a unique identifier for patient demographics. Choose to uncheck the Unique Patient ID when patients can be entered from different institutions (such as scanning centers) that use different ID schemes. Choose to uncheck the Unique Patient when the Patient ID field is not used to identify a patient, such as with clinical research studies.

**Set Database Location:** Selection of this button allows you to **Browse** to a location for the RSCRIBE application and database other than the local default (C:\) directory, beneficial when it is necessary to define the application and database locations on a different data drive.

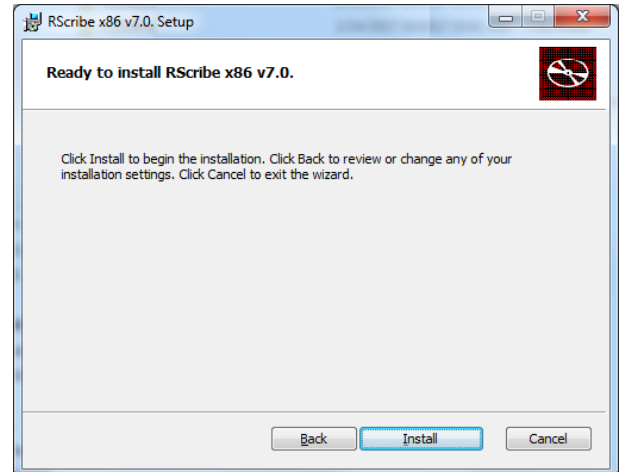
- This selection allows a preview of **Disk Usage** to ensure requirements are met.
- The **Reset** selection will return all changes to default settings.
- Select **Next** to return to the Server Configuration window to continue the installation steps.
- Select **Cancel** to exit the installation process.



Select **Next** and the Installation window below will appear.

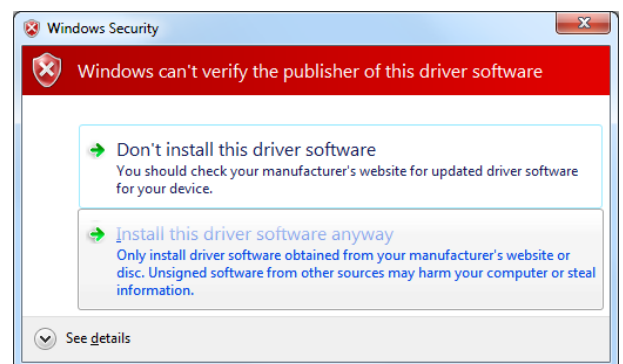
Click **Install** to load the software files to the defined location and then present the Modality Manager Configuration window.

The wizard will now load the software files to the defined location and then present the Modality Manager Configuration window.



During the software installation, you may be prompted to install device driver software. This is needed for the AM12 or WAM UTK drivers.

Select **Install this driver software anyway**



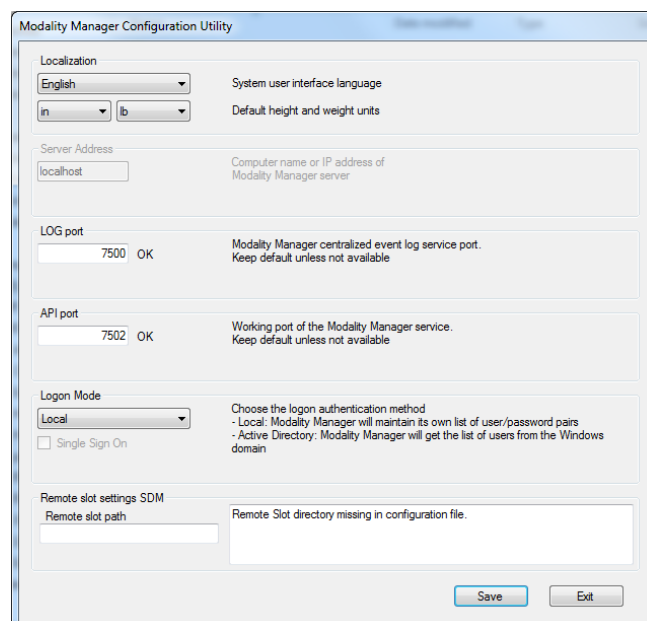
The Modality Manager Configuration window is presented.

**NOTE:** *If any changes are needed, the Modality Manager Configuration Utility can also be accessed after the installation process is completed by selecting the Modality Configuration settings from the Windows START menu → All Programs → Welch Allyn.*

**Language:** This setting is always available to select the desired language.

**Default units:** Choose any combination of height and weight units using the drop-down lists.

**Server Address:** This setting is grayed out when the Database Server functionality is installed on the local computer, but is an active selection when the RScript will access a remote Database Server.



**Log Port:** This setting is always available to select the port to be used for the event log service. Leave on the default if the port is not occupied for other purposes.

**API Port:** This setting is always available to select the port to be used for Modality Manager service. Leave on the default if the port is not occupied for other purposes

**Remote slot settings SDM (Single Directory Management):** This setting is only intended for Server systems. Normally, when an exam is active (selected), all data will be copied from the system database to the local client workstation. If a path is entered here, the temporary data will be copied to a central (local) folder on the server. This method can only be used for Holter workstations and is not applicable to RScript.

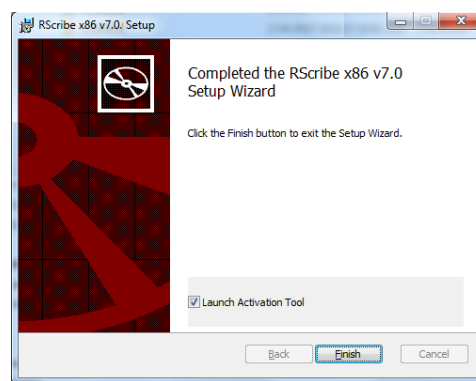
**Logon Mode:** This setting can be set to either Local or Active Directory depending on the user preference. If Local is selected, the Modality Manager Service will maintain its own local listing of user/password pairs for logging onto the system. If Active Directory is selected, the Modality Manager Service will access the list of users from the Windows domain on which the computer has been joined.

The Single Sign On box is grayed out unless the installation includes the database services and is using Active Directory logon authentication.

Once the Modality Manager Configuration Utility settings are correct, select **Save** (if you changed anything), then select **Exit** to continue.

*If you exit without saving modified settings, a warning message will appear.*

Click **Finish** to complete the installation process and exit installation. If checked, the Activation Tool window will launch for entry of your product serial number and for entry of the activation code.





## Feature Activation

An activation code is required to permanently operate full RScribe software functions such as start an exam, access stored exams, schedule patients, review exams, store exams, archive exams, export results and other tasks. Without activation, the system will function for a period of fourteen days and will then become invalid.

To prepare for activation, run the Modality Manager Activation Tool accessed from the following menus:


- Start menu
- All Programs
- Welch Allyn
- Modality Manager Activation Tool (click **Yes** when prompted to allow changes to the computer)

Once your system serial number is entered, this utility generates the site code that is needed for activation by Welch Allyn Technical Support personnel. You can click on the **Copy to Desktop** or the **Copy to Clipboard** button to generate a file to be e-mailed to [mor\\_tech.support@hillrom.com](mailto:mor_tech.support@hillrom.com).

Welch Allyn Technical Support will return an activation code that can be typed or copied and pasted into the white space above the "Activate License" button. Select the Activate License button to activate the software. You can activate the software at any time after installation with the Modality Manager Activation Tool. Contact Welch Allyn Technical Support personnel for further information.

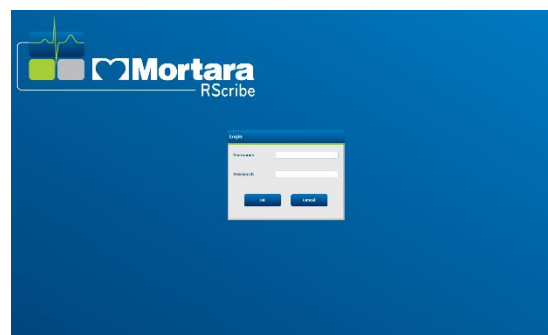
## RScripte Login and Main Display



Use the  icon on the desktop to start the RScripte application.

If not set up with "single sign on", RScripte will require user credentials on startup. Enter your RScripte Username and Password and then select **OK** to open the application main menu.

Note: The default Username and Password are "admin" (password is case-sensitive).



Upon successful login, the RScripte application screen will appear displaying the user name and software version in the bottom left corner.

The icons in the center of the screen indicate workflow tasks in presumed order left to right. Click the icon representing workflow task you wish to perform.

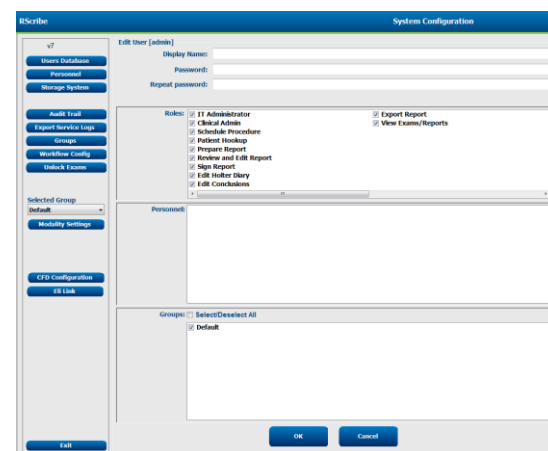
Hover the mouse over an icon to display its function.

Grayed out icons indicate functions that are not available to the user without prior authorization set up previously in system configuration.












The first time you login, select the **System Configuration** icon to setup your access to all functions.

1. Select the **User's Database** button and you will see the "IT Admin" user. Double-click on the name to open the role privileges and check all functions.
2. Click **OK** → **Exit** → **Exit** and start up RScripte again. If you don't do this, most icons are grayed and unavailable.



## RScript Program Icons and Descriptions

Icon and Hover Text	Description
	Desktop shortcut icon to launch the Resting ECG application.
 MWL/Patients	Opens a window with two selectable tabs. A MWL (Modality Work List) tab allows exam scheduling (when no orders interface exists) and schedule review. A Patients tab allows addition of new patient information and editing of existing patient information.
 STAT ECG	Use to bypass Exam Data Entry and proceed directly to real-time ECG for immediate acquisition
 Start a Resting Exam	Use to enter exam data and begin real-time ECG acquisition
 Exam Search	Use to search for exams in the database using filters.
 User Preferences	Use to configure user preferences for the Worklist and to change the password.
 System Configuration	For administrative users to configure system settings such as creating/modifying users, changing the RScript default acquisition criteria, defining archive directories, and so on.
 Exit	Use to close the RScript application and return to the desktop.
	Use to minimize or exit the application and return to the desktop.

## User Roles and Permissions

RScript supports a workflow-oriented setup for defining user roles and controlling user access to the various operations. Role assignments are comprised of a set of permissions for each user type (e.g. IT administrator, clinical administrator, ECG Tech, and so on).

Each user can be assigned a single role or a combination of roles. Some roles will include permissions assigned to other roles where applicable. After installation, a single user is created, with the role of "IT Administrator". Before using RScript, this user should log in and create required users and roles.

Roles	Permission Assignment
IT Administrator	Manage user permissions; manage personnel lists; export settings; archive settings; workflow configuration; storage system configuration; unlock exams; view audit trail reports; export service logs; create and modify groups.
Clinical Administrator	Manage database exams (delete, archive, and restore); copy exams offline to share with Welch Allyn personnel or other sites; view audit trail reports; modify modality settings (profiles, protocols, and other resting ECG specific settings); reconcile; export service logs.
Schedule Procedure	Create new patient orders; associate an order with an existing patient; modify demographics of an existing patient; export service logs.  <i>Scheduling and order entry is only available when RScript is not linked to an external scheduling system.</i>
Patient Hookup (Start a Resting Exam)	Ability to start a test using Start a Resting Exam icon. Includes the ability to create a new patient; associate an order with an existing patient; export service logs.
Edit Holter Diary	Not applicable to the RScript application.
View Exams/Reports	Review exams and final reports only. Includes the ability to search exams, view and print reports; export service logs.
Prepare Report	Review and edit exams to move them from an acquired state to the edited state. Includes ability to search exams and view and print reports; export service logs.
Review and Edit Report	Review and edit exams to move them to the reviewed state. Includes ability to search exams and view and print reports; modify and create conclusions; export service logs.
Edit Conclusions	Create and modify conclusions. Includes ability to review exams and final reports only; search exams and view and print reports; export service logs.
Sign Report	Ability to move exams to a signed state. Includes ability to review exams and final reports; search exams and view and print reports; export service logs. May require user authentication.
Export Report	Ability to export a PDF and XML file when features are enabled. Must be assigned in conjunction with another role (e.g. Review, View, or Conclusions).

Refer to [User Role](#) assignment table with details.

## RScript Workstation Specifications

Feature	Specification*
Input Channels	Simultaneous acquisition of all 12 leads
Standard Leads Acquired	I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6
Waveform Display	Compatible with 1024 x 768, 1366 x 768, 1280 x 800, 1680 x 1050, 1920 x 1080, 1920 x 1200, and 2736 x 1824 resolutions
Compatible Operating Systems	Compatible with: Microsoft® Windows® 7 Professional 32 bit or 64 bit and Microsoft® Windows® 10 Pro 64-bit operating systems
Storage Capacity	100 GB SATA hard disk drive minimum Memory 2 Gb minimum USB ports 3 minimum
Archive	Network or external USB disks (standalone installation)
Input devices	Standard keyboard and 2-button scroll mouse
DVD drive	DVD-ROM, DVD-DRIVE
Network Support	Option to utilize industry-standard database server
Network Infrastructure	100 Mbps connection or better required for use with server
Printing Device	HP M501dn Windows printer with HPUPD PCL 5 driver or equivalent
Optional Function	Welch Allyn VERITAS resting ECG interpretation algorithm with age and gender specific criteria; connectivity with bidirectional communication
On-Screen Tools	Time and amplitude calipers; 40 Hz and 150 Hz noise filters; various lead layouts and grid
Digital Sampling Rate	40,000 s/sec/channel used for pacemaker spike detection; 1,000 s/sec/channel used for recording and analysis
Gain Setting	2.5, 5, 10, 20
Report Formats	Standard or Cabrera; 3+1, 3+3, 6, 6+6, or 12 channel
Rhythm Print Format	Single lead of up to 60 minutes of data
Frequency Response	0.05 – 300 Hz
Filters	High-performance baseline filter; AC interference filter 50/60 Hz; low-pass filters 40 Hz, 150 Hz, 300 Hz
Power Requirements	Dependent on computer, 100 – 240 VAC at 50/60 Hz

\* Specifications subject to change without notice.

## RSubscribe Minimum Server Specifications

Feature	Server Minimum Specifications*
Processor	Performance equivalent to an Intel Xeon class; Quad-core with hyperthreading
Graphics	1024 x 768
RAM	4 GB
Operating System	Microsoft Windows 2008 or 2012 server R2, 64-bit
System Disk	100 GB for OS and product installation (RAID recommended for data redundancy)
Data Disks	550 GB hard drive space available HD controller with 128 MB read/write cache RAID recommended for data redundancy
Archive	Network or external USB drive
Software Installation	CD-ROM
Network	100 Mbps connection or better
Input Devices	Standard keyboard and mouse

\*Specifications subject to change without notice.

## Requirements for RSubscribe as a Citrix XenApp

	Requirements*
Client Machines that will run Citrix XenApp	Windows 7 Professional 64-bit or Windows 10 Pro Operating System
	Citrix Receiver
	Internet Browser – any that is supported by Citrix
	<ul style="list-style-type: none"> <li>• Internet Explorer 11 and 10 (HTTP connections only)</li> <li>• Safari 7</li> <li>• Google Chrome 43 and 42</li> <li>• Mozilla Firefox 38 and 37</li> </ul>
Citrix Domain Controller Server	Citrix XenDesktop Enterprise Edition 7.9
	Any operating system supported by Citrix
Citrix App Servers	Windows 7 Professional (64-bit) or Windows 10 Pro
	Citrix Virtual Delivery Agent 7.9
	RSubscribe software version 7.0.0

\*Requirements subject to change without notice.

## WAM Specifications

Feature	Specification*
Instrument Type	12-lead wireless acquisition module for resting ECG
Input Channels	12-lead signal acquisition and transmission
ECG Leads Transmitted	I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, and V6
WAM Transmission Protocol	Bidirectional and frequency hopping; beacon and response method links a single acquisition module to a single electrocardiograph
Frequency Range	2400.96 MHz to 2482.56 MHz
WAM and Receiver Distance	Approximately 10 feet (3 meters)
Lead Set	RA, LA, RL, LL, V1, V2, V3, V4, V5, and V6 (R, L, N, F, C1, C2, C3, C4, C5, and C6) with detachable lead wires
Sampling Rate	40,000 samples/second/channel acquisition; 1,000 samples/second/channel transmitted for analysis
Resolution	1.875 microvolt LSB
User Interface	Two-button operation: ON/OFF and 12-lead ECG acquisition; Rhythm button is non-functional
Defibrillator Protection	Complies with AAMI standards and IEC 60601-2-25
Special Functions	LED indication of power status, operating mode, lead fail, and remaining battery charge
Device Classification	Type CF, battery operated
Weight	6.7 oz. (190 g) with battery
Dimensions	4.45 x 4.25 x 1.1" (11.3 x 10.8 x 2.79 cm)
Battery	1 AA alkaline battery typically powers WAM for acquisition of 250 resting ECGs





\* Specifications subject to change without notice.

### WAM / UTK

Radio specifications and certification information for the Wireless Acquisition Module (WAM) and USB Transceiver Key (UTK), can be found in the WAM user manual.

## Radio Compliance Table for:

- WAM / UTK

Argentina	Ente Nacional de las Comunicaciones (ENACOM)	 COMISIÓN NACIONAL DE COMUNICACIONES H-22661 (WAM) H22622 (UTK)	
Australia	Australian Communications and Media Authority (ACMA) Radio Compliance Mark (RCM).		
Brazil	Agência Nacional de Telecomunicações (ANATEL)	 Modelo: WAM 01142-14-05187	Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.
EAC			Products meet all requirements of the corresponding technical regulations and have passed all conformity assessment procedures.
Indonesia	Keterangan a. [58975/SDPPI/2018] (UTK) adalah nomor sertifikat yang diterbitkan untuk setiap alat dan perangkat telekomunikasi b. [8260] (UTK) adalah nomor PLG ID (identitas pelanggan) berdasarkan database Lembaga Sertifikasi a. [60825/SDPPI/2019] (WAM) adalah nomor sertifikat yang diterbitkan untuk setiap alat dan perangkat telekomunikasi b. [8260] (WAM) adalah nomor PLG ID (identitas pelanggan) berdasarkan database Lembaga Sertifikasi	Identification a. [58975/SDPPI/2018] (UTK) is a number of certificate issued for certified telecommunication equipment b. [8260](UTK) is a number of PLG ID based on one Certification Body database a. [60825/SDPPI/2019] (WAM) is a number of certificate issued for certified telecommunication equipment b. [8260](WAM) is a number of PLG ID based on one Certification Body database	
Mexico	Instituto Federal de Telecomunicaciones (Federal Telecommunications Institute—IFETEL)	This product contains and Approved module, Model No. WAM, IFETEL No. RCPWEWA19-0527  This product contains and Approved module, Model No. UTK, IFETEL No. RCPWEUT19-0526	La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.
Morocco		AUTHORIZED BY MOROCCO ANRT WAM: Approval number: MR 17489 ANRT 2018	



Date of approval: 13-SEP-2018

UTK: Approval number: MR 17488 ANRT 2018

Date of approval: 13-SEP-2018

Oman	Telecommunications Regulatory Authority		WAM : R/6168/18 D172250 UTK: R/6164/18 D172250
Paraguay	Comisión Nacional de Telecomunicaciones		NR:121/2019 (WAM) NR:122/2019 (UTK)
Pakistan	Pakistan Telecom Authority		
Philippines	National Telecommunications Commission		WAM: ESD-18-18399C UTK: ESD-19-19449C
Singapore	Info-Communications Media Development Authority (IMDA)		
South Korea	Korea Communications Commission (대한민 국 방송통 신위원 회) – KCC Certification number: WAM: IC MSIP-CRI-S83-WAM UTK: IC MSIP-CRI-S83-UTK		This equipment is Industrial (Class A) electromagnetic wave suitability equipment and seller or user should take notice of it, and this equipment is to be used in the places except for home. 이 기 기 는 업 무 용 (A 급) 전 자 파 적 합 기 기 로 서 판 매 자 또는 사용자는 이 점 을 주 의 하 시 기 바 라 며, 가 정 외 의 지 역 에 서 사 용 하 는 것 을 목 적 으 로 합 니 다.  Class A Equipment (Industrial Broadcasting & Communication Equipment) A 급 기 기 (업 무 용 방 송 통 신 기 자 재)
UAE			WAM: ER65767/18 UTK: ER65804/18

## WAM and AM12 Accessories

Part Number	Description
9293-046-07	COMBINER WAM LEADS 10 POS GRAY
9293-046-60	LEAD SET WAM 10 WIRE BANANA AHA GRAY
9293-046-61	LEAD SET WAM 10 WIRE BANANA IEC GRAY
9293-046-62	RPLCE LD SET WAM/AM12 LIMBS BANA AHA GRY
9293-046-63	RPLCE LD SET WAM/AM12 LIMBS BANA IEC GRY
9293-046-64	RPLCE LD SET WAM/AM12 V1-V3 BANA AHA GRY
9293-046-65	RPLCE LD SET WAM/AM12 C1-C3 BANA IEC GRY
9293-046-66	RPLCE LD SET WAM/AM12 V4-V6 BANA AHA GRY
9293-046-67	RPLCE LD SET WAM/AM12 C4-C6 BANA IEC GRY
9293-047-60	LEAD SET WAM 10 WIRE CLIPS AHA GRAY
9293-047-61	LEAD SET WAM 10 WIRE CLIPS IEC GRAY
9293-047-62	RPLCE LD SET WAM/AM12 LIMBS CLIP AHA GRY
9293-047-63	RPLCE LD SET WAM/AM12 LIMBS CLIP IEC GRY
9293-047-64	RPLCE LD SET WAM/AM12 V1-V3 CLIP AHA GRY
9293-047-65	RPLCE LD SET WAM/AM12 C1-C3 CLIP IEC GRY
9293-047-66	RPLCE LD SET WAM/AM12 V4-V6 CLIP AHA GRY
9293-047-67	RPLCE LD SET WAM/AM12 C4-C6 CLIP IEC GRY

## Electrodes

Part Number	Description
108070	ECG MONITORING ELECTRODES CASE 300
108071	ELECTRODE RESTING TAB CASE/5000

## Acquisition Modules

Part Number	Description
9293-048-54	WIRED PATIENT CABLE (AM12)
30012-019-54	WIRELESS ACQUISITION MODULE (WAM)
30012-021-51	UTK (Wireless receiver / transceiver)
9293-065-50	WIRED PATIENT CABLE (AM12M) W/O LEAD WIRES
6400-015	Cable Extension USB Type A-TO-A 6FT

## Manuals

Part Number	Description
9515-XXX-51-CD	PHYSICIAN'S GUIDE ADULT & PEDIATRIC UM ON CD
9515-217-50-CD	RSCRIBE USER MANUAL PDFS ON CD
9515-217-50-ENG	RSCRIBE USER MANUAL ENGLISH
9516-217-50-ENG	RSCRIBE SERVICE MANUAL
9515-166-50-CD	ELI LINK USER MANUALS ON CD

Contact your dealer or go to [www.welchallyn.com](http://www.welchallyn.com) for more information.

## RScript Network Operation in a Distributed Configuration

The RScript network capabilities leverage a common database across multiple networked RScript workstations where exams will be conducted and RScript Review stations where acquired exams can be reviewed and edited.

A distributed configuration is comprised of a dedicated server and a number of networked client RScript workstations and RScript Review Stations sharing the same database.

A distributed configuration supports efficient operation for a busy department to:

- Create logins for all users at a single location who can log into any networked station.
- Define system settings at a single location for all networked workstations and review stations.
- Manually schedule exam orders, when no orders interface exists, that are available to all RScript workstations regardless of the lab location.
- Access and update Patient Information, exam data, and final reports from multiple locations.
- Start exams utilizing scheduled orders received from the institution information system with a single DICOM or HL7 interface to the shared database. Refer to the ELI Link Administrator manual for network interface configuration instructions.
- Selectively search the database to review any completed exam's full disclosure data. This includes the ability to edit measurements, sign, print, and export the final report from multiple RScript workstations and review stations on your network, dependent on the user permissions.
- Manage the stored data for all exams with ability to view audit trails, create groups, configure workflow, troubleshoot issues, and archive/restore/delete exams at a single location according to user permissions.

### Microsoft Updates

Welch Allyn recommends that all RScript workstations and review stations be periodically updated with Microsoft critical and security updates to protect from malware attacks and to fix critical Microsoft software issues. The following guidelines apply for Microsoft updates:

- Customer is responsible for applying Microsoft updates.
- Configure Microsoft updates to be manually applied.
  - Turn automatic Windows update off and run it periodically as a manual action.
- Do not install Microsoft updates during active use of the product.
- Run a functional test after any update which includes conducting a test exam as well as importing an order and exporting results (if activated) before running patient exams.

Each RScript product release is tested against the cumulative Microsoft updates at the time of product release. There are no known Microsoft update conflicts with the RScript application. Please contact Welch Allyn Technical support if conflicts are identified.

## Anti-Virus Software

Welch Allyn recommends the use of anti-virus (AV) software on computers hosting the RScribe application. The following guidelines apply in the use of AV software:

- Customer is responsible for installation and maintenance of AV software.
- AV software updates (software and definition files) should not be applied during active use of the RScribe application.
  - AV patch updates and system scans should be scheduled for time periods when the system is not actively in use or should be performed manually.
- AV software must be configured to exclude files/folders as defined in [Cautions](#) in User Safety Information and below:
  - Welch Allyn recommends excluding the RScribe database folder (normally `C:\ProgramData\MiPgSqlData`) from the folders to be scanned.

If a technical support issue is reported, you may be asked to remove the virus scanning software to allow investigation of the issue.

## Encrypt Protected Health Information (PHI) Stored in RScribe

The RScribe database may be configured for Windows Encrypted File System (EFS) for protection of patient data security. EFS encrypts individual files with a key stored with the Windows user account. Only the Windows user that encrypts or creates new files in an EFS-enabled folder can decrypt the files. Additional users can be granted access to individual files by the original account that encrypted the files.

***NOTE:** The RScribe system database must be unencrypted prior to performance of any software upgrades.*

Contact Welch Allyn technical support if your facility requires this security feature.

# USING RSCRIBE

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A typical workflow on RSubscribe consists of the following actions:

## Schedule an exam

An exam is scheduled for a patient; exam data such as referring physician and requested date and time are entered. If the patient does not exist in the database, patient demographic data is entered. Orders may be managed through the RSubscribe Modality Worklist (MWL) feature, or through an external scheduling system interface.

## Start a resting exam

The patient is connected to the RSubscribe through the data acquisition module, data is collected and one or more 10 second ECGs are saved for analysis and further processing. An exam may fulfill an order or can be an ad-hoc exam, in which case a patient must be selected from the database or a new patient created with demographic data entered. RSubscribe can collect multiple ECGs in a single acquisition session that may last for up to one hour, dependent on system settings. ECGs and a full disclosure rhythm page may be previewed and printed on the Windows default printer during an acquisition session. The ECG records can be modified with appropriate user permissions.

## Acquiring a STAT ECG exam

The STAT ECG icon can be selected when there is an immediate need to acquire an ECG without prior demographic data entry. The patient is connected to the RSubscribe through the data acquisition module, data is collected and one or more 10 second ECGs are saved for analysis and further processing. Patient Information can be accessed after the ECG is acquired where the Last Name field has been automatically populated with STAT ECG. These saved exams can be found through exam search to update patient information at a later time.

## Reviewing and signing an exam and printing a report

In order to edit the measurements or select demographics of an exam and electronically sign it, you must have the necessary permission to do so. The program will automatically start the Review mode after exiting the acquisition session with the first ECG that was collected during the session. Other acquired ECGs are saved and can be found through exam search.

## Real-time Display

Real-time ECG may be displayed in one of two full-screen views. The standard (12x1) full-screen view displays 10 or more seconds of continuous waveform data for each of the 12 leads. The split-screen (6x2) view displays 5 or more seconds of continuous waveform data for each of the 12 leads. The six (6) limb leads appear on the left and the six (6) precordial leads appear on the right side of the screen.

To change the default display format for the real-time ECG view, see the *Settings* section in this manual.


**NOTE:** *The amount of data displayed may vary and depends on display speed and display size.*

## Recording an ECG




RSubscribe can acquire single or multiple ECGs in real time, retrospectively, or in a timed sequence.

Prepare the patient for best conductivity between the skin surface and the electrode. Place the electrodes on the patient according to lead placement guidelines. Ensure that the proper lead wire is firmly and correctly attached to each electrode.

Select an existing order from the MWL tab, search for the patient from the Patients tab, or manually enter patient demographics.






The real-time ECG display can be exited with selection of the Done  button to return to the Start a Resting Exam display at any time. The user is prompted to select Yes or No when an ECG has not been acquired.

To acquire a real-time ECG:

- Select the ECG button on the display to capture Best 10  or Last 10  12-lead ECG data.
  - BEST 10 captures the best quality, 10-second ECG accumulated within the full disclosure
  - LAST 10 captures the most recently acquired 10-second ECG
- Or, select the **ECG** button  on the WAM™ or the AM12™ that will capture either the BEST or LAST 10-seconds of acquired ECG dependent on RSubscribe configurations.

## Preview Acquisition Screen

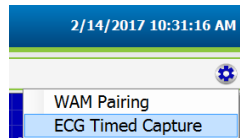
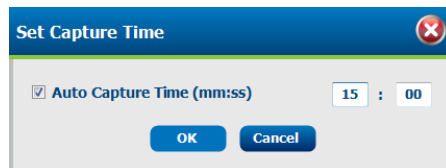

The ECG preview screen appears with an ECG report exactly as it will save and print upon exiting this display.

- Select the **Save**  button to save the ECG as acquired, exit, and return to the Start a Resting Exam display.
- Select the **Delete**  button to discard the ECG and return to the real-time ECG display to capture another ECG.
- Select the **Review**  button to save the ECG as reviewed, exit, and return to the Start a Resting Exam display. The user is prompted to enter the reviewer's name prior to exit.
- Select the **Sign**  button to save the ECG as signed, exit, and return to the Start a Resting Exam display. The user is prompted to enter the signer's name prior to exit. When Legal Signature has been defined in the workflow configuration settings, the signer is prompted to enter the user name and password.
- Select the **Print ECG**  button to print the displayed ECG according to the Resting ECG settings.

## Timed ECG Capture

RSubscribe can automatically acquire ECGs at preset time intervals for future review and processing on the full disclosure screen. Automatic acquisition may be as frequent as every 20 seconds or once per a 60-minute period (dependent on the amount of full disclosure time set by the administrator).

To acquire timed ECGs:

- Prep the patient and place the electrodes in the correct locations (ensuring lead wires are securely attached).
- Select **ECG Timed Capture** from the settings icon in the upper left corner of the real-time ECG display.
 
- Enable **Auto Capture Time** by checkbox.
 
- Enter the frequency in the **Set Capture Time (mm:ss)** window
  - 20 seconds up to 59-minutes and 59-seconds.
- Select **OK** to begin automatic ECG collection or **Cancel** to exit the window.
  - Message appears prompting a manual ECG capture
- Capture the first ECG to begin the timed ECG capture. The time remaining to the next capture and the number of ECGs captured is displayed in the lower right corner of the display.
 

ECGs are automatically captured according to the Full Disclosure duration defined by the administrator. ECG capture automatically ends when the duration has been reached.






Automatic ECG capture can be manually ended with selection of the done  button.

Captured ECGs are saved and can be reviewed and edited using the Exam Search feature.

## ECG Capture from the Full Disclosure Data Window

The full disclosure data window is located at the bottom of the ECG display screen. ECG data is displayed using a single lead or three leads according to the settings.

To acquire a retrospective ECG:

- Use a left mouse click anywhere in the full disclosure ECG to highlight 10-seconds of data. Once clicked, the Page Up , Page Down , Select , and Print Full Disclosure  buttons become active allowing navigation and ECG selection.
- Position the 10-second box of highlighted ECG anywhere in the full disclosure ECG using left mouse clicks and the Page Up/Down buttons.
- Select the ECG button to the right of the full disclosure  to capture the highlighted 10-second 12-lead ECG.

## ECG Collection Using the Acquisition Module

ECG acquisition can be performed at the WAM or AM12 acquisition modules. Refer to the AM12 short-form instruction card when using the AM12.

***NOTE:** The WAM must be synchronized to the UTK before RSCRIBE operation. The Universal Transmitter/receiver Key (UTK) is a bidirectional device that links the PC's USB port to the WAM.*

Select the **ECG** button  on the WAM™ or the AM12™ to capture the last 10-seconds of acquired ECG.


## Connecting the Acquisition Module

The AM12 connects to a USB port on the PC for signal acquisition. The RSCRIBE will automatically detect the AM12 once it's connected to the USB port.

The WAM communicates via the UTK (Universal Transmitter/receiver Key) connected to an active USB port on the PC. The WAM is synchronized with the UTK making them a matched pair. Using the same UTK and WAM that were last paired maintains their synchronization.

## Pairing WAM with RSCRIBE

Start the RSCRIBE application. Navigate to the real-time display and:

- Select the settings icon  in the upper right corner of the real-time display
- Select **WAM Pairing**
- Place the WAM (powered off) in close proximity to the UTK receiver connected to an RSCRIBE USB port.
- Select **Start** and then **Yes**
- Power the WAM on.
- A successfully paired message will display.
- Select **DONE**.

***NOTE:** The wireless acquisition module (WAM) must be paired to a specific RSCRIBE prior to signal acquisition.*

***NOTE:** If both AM12 and the UTK are connected simultaneously, RSCRIBE will default to the AM12 over the UTK with WAM for acquisition.*

***NOTE:** Disconnecting the UTK and connecting the AM12 will automatically cause the RSCRIBE to switch to the AM12. It is not necessary to pair the same WAM with the same UTK to use it again.*



## MWL/PATIENTS



The MWL/Patients icon allows you to schedule exams and enter patient demographics information. Select this icon to open a window for scheduling resting ECG exams and to view the existing schedule.

When RScript is linked to an external scheduling system, this information arrives from institution entered orders.

When the icon is selected, a split window appears with two selectable tabs (MWL and Patients) on the left and Patient or Order Information fields on the right, dependent on the selected tab.

A Search field and button are present below the tab selections.

The screenshot shows a window with two tabs: "MWL" and "Patients". The "Patients" tab is selected. Below the tabs is a search input field and a blue "Search" button.

### MWL

Text that is entered in the search field will be used to search through the Modality Worklist (MWL) to display orders that start with matching text in the Last Name, First Name, or Patient ID. A blank search field will list all orders.

MWL columns include Scheduled Date/Time, Patient ID, Last Name, First Name, Date of Birth, and Group. The list can be sorted by a click on the column headers. A second click on the same header will reverse the column order.

**NOTE:** Selection of an unavailable order (e.g. in use at another workstation, deleted, or canceled) will result in a refresh of the listed orders.

### Edit Order

Selection of an entry in the list will display the Order Information as read-only. Select the **Edit** buttons to modify the order. Select the **Save Order** button to save changes or **Cancel** to cancel all changes.

**NOTE:** This function is not available when an orders interface is enabled.

The screenshot shows the MWL/Patients interface. On the left, there is a table with columns: Scheduled Date/Time, Patient ID, Last Name, First Name, Date of Birth, and Group. The table contains four rows of data. On the right, there is a "Patient Information" panel with various fields for patient details, including Name, Gender, Race, Ethnicity, Age, Height, Weight, Admission ID, and various medical history checkboxes. At the bottom, there are buttons for "New Order", "Edit Order", "Delete Order", and "Tab".

Scheduled Date/Time	Patient ID	Last Name	First Name	Date of Birth	Group
11/10/2015 08:00:00 AM	489822	Smolenski	Michelle	02/22/1987	Medicine
11/10/2015 08:00:00 AM	489722	Smolenski	Michelle	02/22/1987	Cardiology
11/10/2015 08:00:00 AM	328322	Hogan	Michael	07/21/1975	Cardiology
11/10/2015 08:00:00 AM	489742	Jackson	Heather	07/08/1974	Cardiology

## New Order

A **New Order** button allows a Patient ID or name search of patient information in the database allowing addition of a new order in the MWL list. A blank search field will list all patients in the database.

The screenshot shows the 'MWL/Patients' interface. On the left, there is a table with columns: Scheduled Date/Time, Patient ID, Last Name, First Name, Date of Birth, and Group. Below the table is a search window titled 'Patient Information' with a search field and a list of patient records. On the right, there is a 'Patient Information' form with fields for Last Name, Middle Name, DOB, Height, Weight, and a Group dropdown menu. At the bottom, there are buttons for 'New Order', 'Cancel', and 'Exit'.

When the patient does not exist in the database, **Cancel** the Patient Information search and select the **Patients** tab to enter a new patient. Instructions are on the following page.

The patient information populates the Order Information at the right of the display. Additional order information can be entered and the order saved. The **Cancel** button will close the order without saving.

When entering an order, use the **Group** drop-down list to assign the order to a specific group that has been configured in the system settings. This is not necessary when there is no more than one Group.

Select the calendar icon in the bottom right corner of the **Order Information** section to open a calendar for selection of the scheduled order date and time. Date and time may also be entered by typing in the **Requested Date/Time** field.

The screenshot shows a 'Requested Date/Time' field with the value '04/30/2015 14:35:37'. Below it is a calendar for April 2015. The date '16' is selected. To the right of the calendar is a time selection field showing '14:00:00'. At the bottom, there are 'Yes' and 'No' buttons.

## Delete an Existing Order

Select an existing patient order by highlighting the line and then select **Delete Order**.

A warning message prompting delete confirmation will appear. Select **Yes** to delete the order or **No** to cancel and return to the MWL listing.

The screenshot shows a 'Warning' dialog box with a yellow warning icon. The text reads: 'Do you really want to delete the selected Order?'. There are 'Yes' and 'No' buttons at the bottom.

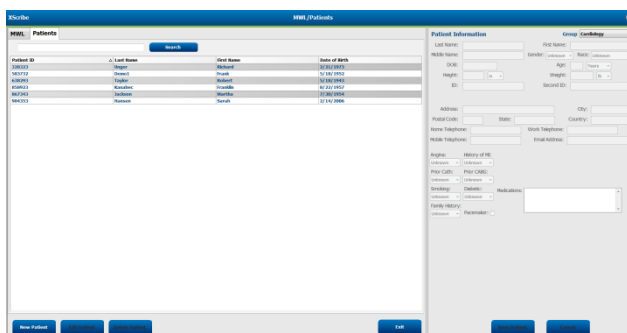
## Exit MWL/Patients

Select the **Exit** button when finished to return to the main menu.

## Patients

Text that is entered in the search field will be used to search through the patient demographics in the database to display any patients that start with matching text in the Last Name, First Name, or Patient ID.

Patients' columns include Patient ID, Last Name, First Name, and Date of Birth. The list can be sorted by selecting the column headers. A second selection on the same header will reverse the column order.



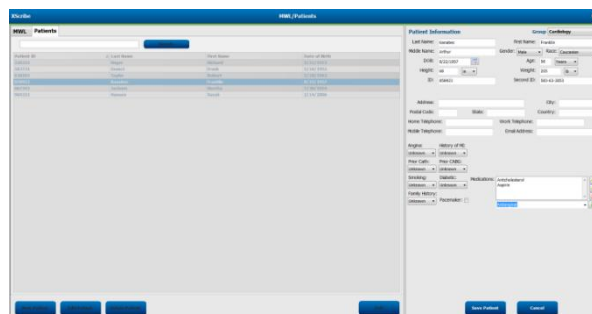
## Edit Patient

Selection of an entry in the list will display the Patient Information as read-only. Select the **Edit** button to enable and modify the patient demographics fields.

Select the **Save Patient** button when finished to save changes or the **Cancel** button to return to read-only demographics without saving changes.

## New Patient

A **New Patient** button clears any selected patient information allowing addition of a new patient in the list. The new patient information can be entered in the demographic fields and the **Save Patient** button selected to save it to the database. The **Cancel** button will close the patient information without saving.

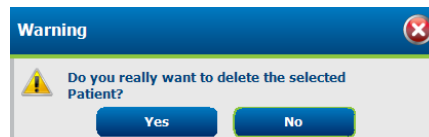


## Delete Patient

Select the **Delete** button to remove patient demographics from the database.

*NOTE: The Delete button is disabled when the patient demographics are associated with an existing order or exam. All orders and exams for that patient must first be deleted before the patient demographics can be deleted.*

A warning message prompting delete confirmation will appear. Select **Yes** to delete the patient demographics or **No** to cancel and return to the Patients listing.



## Exit MWL/Patient

Select the **Exit** button when finished to return to the main menu.

# RECORD AN ECG

---

## Patient Preparation

Before attaching the electrodes, assure the patient fully understands the procedure and what to expect.

- Privacy is very important in assuring the patient is relaxed.
- Reassure the patient that the procedure is painless and that the electrodes on their skin are all that they will feel.
- Make sure the patient is lying down and is comfortable. If the table is narrow, tuck the patient's hands under his/her buttocks to ensure their muscles are relaxed.
- Once all the electrodes are attached, ask the patient to lie still and to not talk. Explain this will assist you in acquiring a good ECG.

## Preparing Patient Skin

Thorough skin preparation is very important. There is natural resistance on the skin surface from various sources such as hair, oil, and dry, dead skin. Skin preparation is intended to reduce resistance and maximize the quality of the ECG signal.

To prepare the skin:

- Clip hair from electrode sites if necessary.
- Wash area with warm, soapy water or alcohol if dirty or oily.
- Dry skin vigorously with a pad such as 2 x 2 or 4 x 4 gauze to remove residue from cleaning, dead skin cells and oil, and to increase capillary blood flow.

*NOTE: With elderly or frail patients take care to not abrade the skin causing discomfort or bruising.*

## Patient Hookup

Correct electrode placement is essential for acquiring a diagnostically valid ECG.

A low resistance highly conductive pathway from the skin surface to the electrocardiograph provides superior noise-free waveforms. Good quality silver-silver chloride (Ag/AgCl) electrodes within their expiration date should be used whenever taking an ECG.

*TIP: Electrodes should be stored in an air-tight container. Electrodes will dry out if not stored properly causing reduced adhesion and conductivity, leading to poor trace quality.*

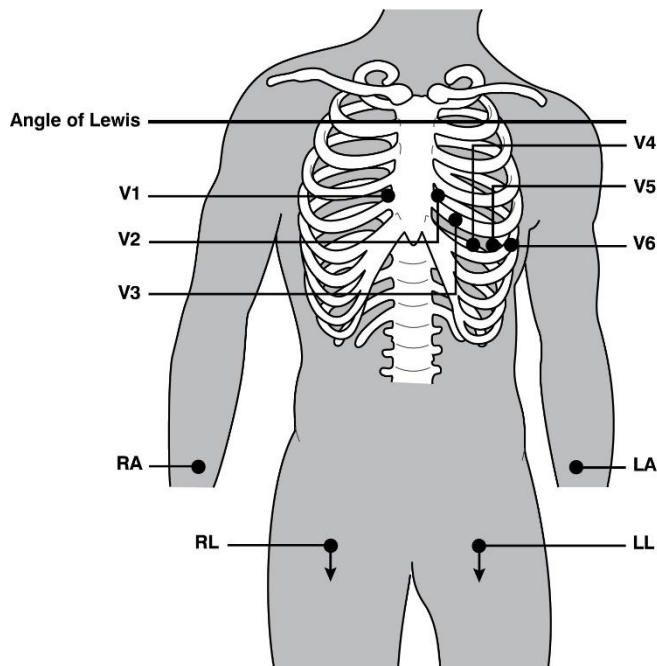
## To Attach the Electrodes

1. Expose the arms and legs of the patient to attach the limb leads.
2. Place the electrodes on flat, fleshy parts of the arms and legs.
3. If a limb site is not available, place the electrodes on a perfused area of the stump.
4. Attach the electrodes to the skin. A good test for firm electrode contact is to slightly tug on the electrode to check adhesion. If the electrode moves freely, it needs to be changed. If the electrode does not move easily, a good connection has been obtained.

For accurate V-lead placement, it is important to locate the 4<sup>th</sup> intercostal space. Because patients vary with respect to body shape, it is difficult to palpate the 1<sup>st</sup> intercostal space with accuracy. Thus, locate the 2<sup>nd</sup> intercostal space by first palpating the little bony prominence called the **Angle of Lewis**, where the body of the sternum joins the manubrium. This rise in the sternum identifies where the second rib is attached, and the space just below it is the 2<sup>nd</sup> intercostal space. Palpate and count down on the chest until you locate the 4<sup>th</sup> intercostal space.

**Patient Hookup Summary Table**

AAMI Lead	IEC Lead	Electrode Position
<b>V1</b> Red	<b>C1</b> Red	On the 4 <sup>th</sup> intercostal space at the right sternal border.
<b>V2</b> Yellow	<b>C2</b> Yellow	On the 4 <sup>th</sup> intercostal space at the left sternal border.
<b>V3</b> Green	<b>C3</b> Green	Midway between V2/C2 and V4/C4 electrodes.
<b>V4</b> Blue	<b>C4</b> Brown	On the 5 <sup>th</sup> intercostal space at the left midclavicular line.
<b>V5</b> Orange	<b>C5</b> Black	Midway between V4/C4 and V6/C6 electrodes.
<b>V6</b> Violet	<b>C6</b> Violet	On the left midaxillary line, horizontal with V4/C4 electrode.
<b>LA</b> Black	<b>L</b> Yellow	On the deltoid, forearm, or wrist.
<b>RA</b> White	<b>R</b> Red	
<b>LL</b> Red	<b>F</b> Green	On the thigh or ankle.
<b>RL</b> Green	<b>N</b> Black	



## Patient Demographic Entry

Patient demographic information can be entered before, during or after acquisition. The entered patient ID fields will remain populated until you acquire the ECG; however, if you turn off the device before exiting the patient information will be cleared.

In addition to the default patient ID format, RSCRIBE also supports custom ID formats for each group through use of ELI Link. Refer to the ELI Link Administrator Manual, Part number 9515-166-50-ENG, for instructions on Custom ID.

## STAT ECG



To begin STAT ECG acquisition without patient demographic entry, select the STAT ECG icon from the main display to directly start continuous ECG display. Skip to ECG, Acquisition, and Storage on the following pages. Patient demographics may be entered during ECG collection or after ending ECG acquisition by retrieval of the STAT ECG from the database.

## Start a Resting Exam

Select the Start a Resting Exam icon to open the MWL/Patients window.

- When scheduled orders exist, the MWL tab is automatically selected.
- When no scheduled orders exist, the Patients tab is automatically selected.

## Scheduled Order(s)

1. When there is an existing order for the patient, highlight the patient in the MWL list.

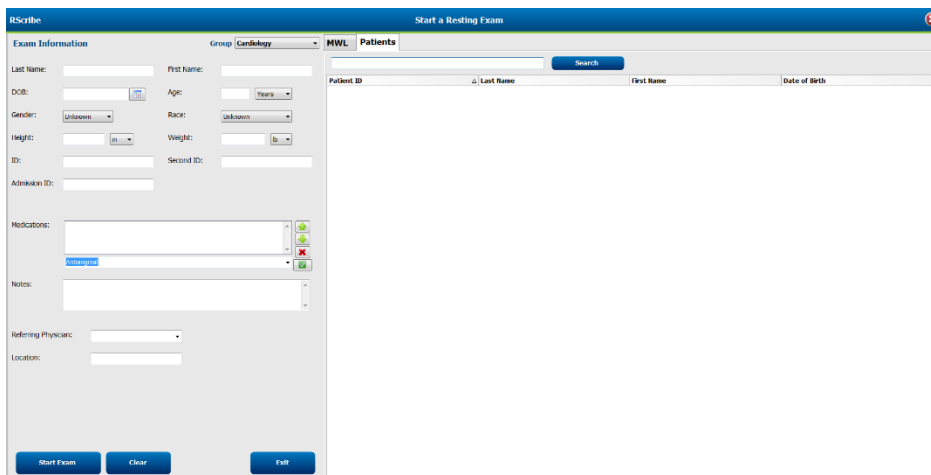
The Exam Information section on the left side of the display is populated by the previously entered patient demographics.

2. Enter any desired exam information on the left panel and select **Start Exam**.

**NOTE:** Selection of an unavailable order (e.g. in use at another workstation, deleted, or canceled) will result in a refresh of the listed orders.

## No Scheduled Order(s)

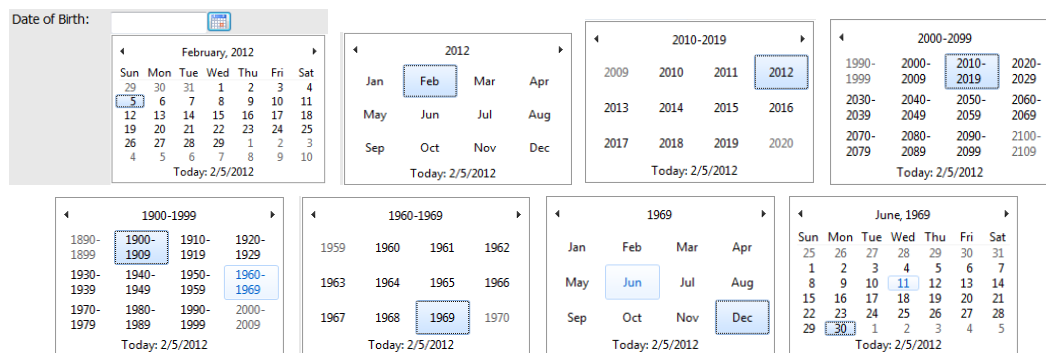
When no scheduled orders exist, the Patient tab is automatically selected.



1. Search for existing patients in the database by entering a name or ID number, and then select the **Search** button.
2. When the patient information is not found, enter any desired patient and exam information on the left panel.

*NOTE: If the entered ID number already exists in the database, a warning will appear informing you to click OK to continue or Cancel to correct the entered demographics.*

Enter date of birth by typing MM/DD/YY or DD-MM-YY according to the computer regional settings, or by clicking on the calendar icon. Select the decade and the year; use the left/right arrows to scroll the year, the month, and the day to populate the field. Age will be automatically calculated.



RScribe will remember list items such as Indications, Medications, Procedure Type, and Referring Physician as they are entered. The added items will be available for future selection. Enter text or choose items from the drop-down menu and then click on the green checkmark to enter. Use the red **X** to delete the selected item. When there are multiple entries, items can be moved up or down by using the green arrow keys.

Some fields are not available (grayed) when patient demographics are attached to existing exams in the database or are ordered by an external system. The grayed fields are Last Name, First Name, DOB, Age, Gender, Race, ID and Second ID.

## ECG Acquisition, Printing, and Storage

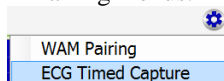
Once the patient is connected, RSCRIBE continuously captures and displays ECG data. The patient should be in a supine position and encouraged to relax to ensure that the ECG is free from artifact (noise) due to patient activity.

### Display Overview

The screenshot displays the RSCRIBE software interface. At the top, it shows 'Menu Items' and the date/time '2/21/2017 3:39:05 PM'. The main area is a 12-lead real-time ECG view with leads I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, and V6. The interface includes several menu items on the left: 'Patient Demographics' (showing 'Male, 54 Years'), '12-lead Real-time ECG View', 'Gain/Speed/Filter', and 'Full Disclosure ECG / Full Disclosure Menu Icons'. On the right, there are buttons for 'Date/Time', 'Patient Heart Rate' (90 BPM), 'Patient Information', 'ECG Acquisition', 'Exit', and 'Timed Capture Status'. The ECG display shows a regular rhythm with a heart rate of 90 BPM.

### Menu Selections

- Click on the settings button in the upper-right area of the display to open the ECG Timed Capture and WAM Pairing menus.



- Select **ECG Timed Capture** to automatically acquire ECGs at preset time intervals.
  - Refer to page 39 for instructions
- Select **WAM Pairing** to pair the WAM acquisition module.
  - Refer to page 39 for instructions
- Click the show/hide Full Disclosure ECG section in the lower-left area of the display as desired.



### Date/Time

Current date/time according to the computer regional settings is displayed in the upper right-hand corner of the display.

### Real-Time Heart Rate

When a patient is connected to the RSCRIBE, his/her heart rate is displayed in real time. The HR is the average ventricular rate measured over the patient's last five beats.

**NOTE:** If a lead fail occurs or swapped leads are suspected, a red message is visible next to the HR, indicating the leads off or possibly misplaced, for both limb lead and chest lead fault conditions.



## Timed Capture Status





Values in the lower-right area of the ECG display indicate the time remaining until the next timed ECG capture and the total number of 10-second 12-lead ECGs that are currently captured and saved.

Time to Next Capture: 3:52  
ECG Count: 4

## Full Disclosure ECG





Single lead ECG or three (3) lead ECG (configurable) is accumulated and displayed along the bottom area of the display. Twelve (12) leads of ECG are accumulated and stored for up to 60 minutes of full disclosure, which can be reviewed or printed as a single lead or as acquired ECG.

## ECG Display Menu Icons

Icon	Description
	Patient Demographics allows editing of existing and entry of new demographics. Only height, weight, admission ID, medications, notes, referring physician and location can be edited.
	ECG button permits the capture of an ECG at any time the patient is connected.
	10 appears in the place of ECG when Best 10 capture mode is set up; selects the best 10 seconds of the full disclosure as the captured ECG.
	Done ends and exits the ECG acquisition session.

## Full Disclosure Menu Icons

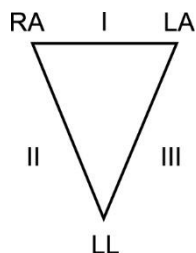
Click within the full disclosure ECG to enable the menu icons for selection.

Icon	Description
	Page Up advances the cursor back one page. Page size is determined by the format, speed, and computer screen size.
	Select allows for the selection of the data in the cursor to be analyzed.
	Prints a single lead rhythm page of the Full Disclosure.
	Page Down advances the cursor forward one page. Page size is determined by the format, speed, and computer screen size.

## Acquire ECGs

Examine the display for artifact or baseline drift. Re-prep and replace electrodes if necessary to obtain satisfactory waveforms. (See *Patient Preparation*.)

Please refer to the following troubleshooting guide based on Einthoven’s Triangle:




Artifact	Check Electrode
Lead II and III artifact	Poor LL electrode or left leg tremor
Lead I and II artifact	Poor RA electrode or right arm tremor
Lead I and III artifact	Poor LA electrode or left arm tremor
V Leads	Re-prep site & replace electrode


If a lead fault occurs, square waves appear on the display for that lead and the lead(s) that are faulty will display in the upper left corner of the screen one at a time. After the leads are reattached correctly at least 10 seconds must be acquired before an ECG can be captured.


The program monitors the ECG waveform for unusual configurations that could be caused by misplaced (swapped) electrode positions. If the program detects a high probability of electrode swap, it will display a message like "RA or LA misplaced?" in the same message area as used for lead fault. Check the electrode connections for any misplacement.

*NOTE: Although the majority of lead wire swaps are correctly detected, some real ECG configurations may give rise to an inappropriate "misplaced" message, and some real swaps may not be detected due to patient specific ECG morphologies. The automatic detection helps to prevent lead wire swaps but do not rely completely on the automatic detection.*


### Manual ECG Capture


Use the Capture ECG  icon to capture the last 10 seconds of the real time ECG. The captured ECG will appear on the screen in a format similar to a printout. An average beat can also be viewed if enabled.

The print ECG icon  can be used to print the unconfirmed report; if set in the configuration, the ECG will print automatically.



ECG acquisition can also be captured by pressing the ECG button  on the WAM or AM12 acquisition module.

### Best 10 Seconds Selection

When the BEST 10  icon is selected, RScript automatically selects the best quality 10 seconds of acquired ECG available from within the full disclosure ECG buffer.

ECG acquisition can also be captured by pressing the ECG button  on the WAM or AM12 acquisition module when Best 10 capture has been set up. However, this action will always capture the last 10-seconds of acquired ECG.

## Capturing ECGs from Full Disclosure

Click anywhere in the full disclosure display at the bottom of the screen to capture an ECG retrospectively from the buffer. A green rectangle will appear highlighting the selected 10-seconds of ECG data. You can navigate through the window with the mouse, or use the page up/down buttons to the right. Use the ECG icon  to capture the 12-lead ECG. The complete full disclosure data can be printed as a single lead by using the Print Full Disclosure  icon. Waveform data reviewed on the screen can be selected and printed as a single lead of up to 60 minutes of data, depending on the amount of ECG data that has been acquired.

***NOTE:** ECG size and gain will automatically adjust to allow all data to fit on one page.*

***NOTE:** The full disclosure data cannot be accessed once the acquisition session has ended.*

## Timed ECG Recording

RSubscribe automatically acquires ECGs at preset time intervals for future review and processing on the full disclosure screen. Automatic acquisition is based on the amount of full disclosure time set by the administrator. It may be set as frequent as every 20 seconds or as infrequently as once per a 60-minute period.







The ECGs captured for the current patient are presented as white rectangles in the full disclosure window. As the waveform data on the screen refreshes, additional ECGs can be acquired as necessary. Previously acquired data will be retained in the buffer until the full disclosure buffer has been filled.


See the description of the Menu Item "ECG Timed Capture" on page 39 for instructions how to initiate and set up timed capture of ECGs. To begin, manually capture an ECG to start timed collection.


***NOTE:** When the full disclosure buffer duration set by the administrator is reached, RSubscribe automatically ends ECG capture and will display the last captured ECG.*

## Captured ECG Display and Icons


Once captured, the ECG is displayed with global measurements and the VERITAS automatic interpretation. Icon button selections are located at the right of the captured ECG and actions are described below.

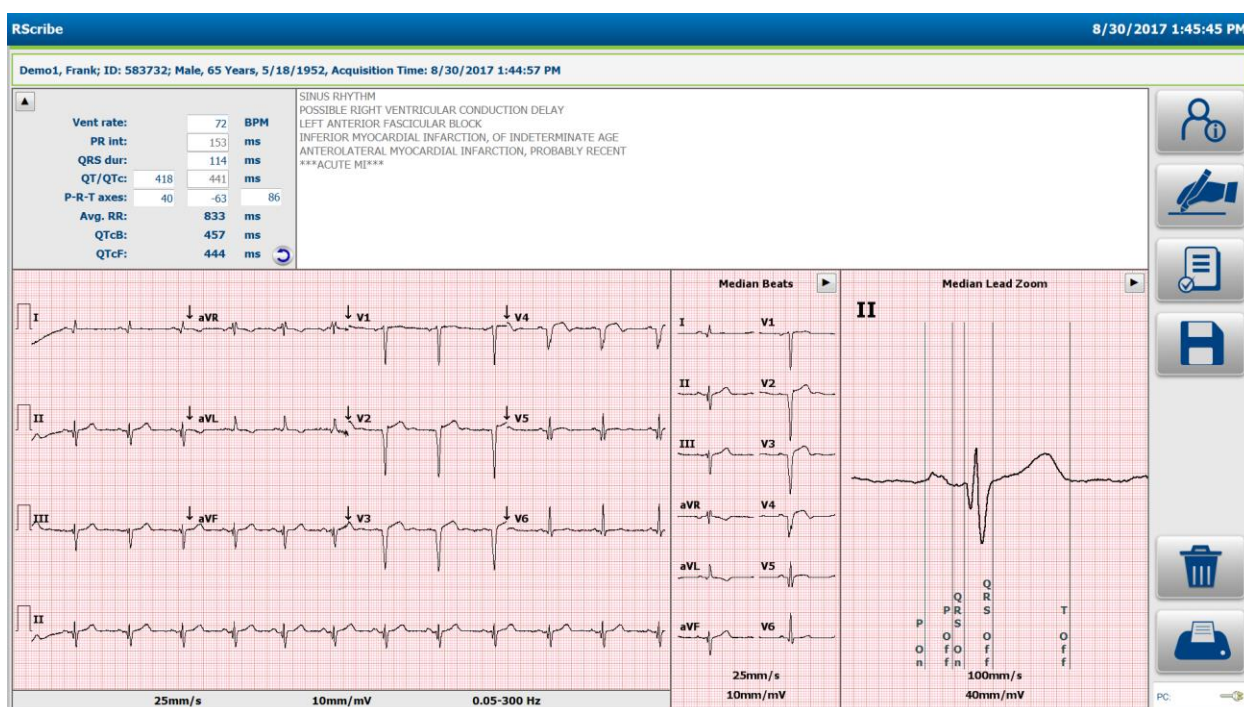
Icon	Description
	<b>ID</b> allows editing of existing and entry of new patient information. Only height, weight, admission ID, medications, notes, referring physician and location can be edited.
	<b>Sign</b> the displayed ECG. Icon is only available for those logged in with signing authority.
	Mark the displayed ECG with a <b>Reviewed</b> status. Icon is only available for those logged in with permission to Edit and Review exams. User is prompted to enter the Reviewer's name and select OK. Start a Resting Exam is then displayed.
	<b>Save</b> the ECG. ECG is saved with an "Acquired" status. Start a Resting Exam is then displayed.
	<b>Delete</b> the ECG. User is prompted to select Yes or No and is then returned to the real-time ECG display.
	<b>Print ECG</b> will send the displayed ECG to the default printer.

Median Beats and Median Lead Zoom panels can be shown or hidden by toggling the small arrow buttons  in the upper-right corners.

The global measurement and interpretation panels can be shown or hidden by toggling the small arrow button  in the upper-left corner.

Measurement parameters can be changed with a double-click in the Median Lead Zoom area and by dragging the cursors to the desired positions. Global measurements are updated upon selection of the OK button. Cancel will undo any changes and revert back to the original locations and global values.

An undo icon  in the bottom-right corner of the measurements area can be selected to revert back to the original measurements when selected before saving the ECG.



**NOTE:** If no patient age is entered prior to acquiring an ECG, the interpretation algorithm assumes a 40-year old male. The statement "INTERPRETATION BASED ON A DEFAULT AGE OF 40 YEARS" will be added to the Interpretation text.

**NOTE:** If a patient age of zero (0) is used the interpretation algorithm will assume a 6-month old infant. The statement "INTERPRETATION BASED ON A DEFAULT AGE OF 6 MONTHS" will be added to the interpretation text.


**NOTE:** Where global measurement values are not available (i.e., rate, interval, axis), text such as '- ' or '\*' or similar will display/print for the unavailable value.

## Printing

If Auto-Print is enabled in the configuration, an ECG is printed following ECG capture, both for manual or timed capture.

For manual printing, select the Print ECG  button icon. The view on the display is what will print out.

To change the speed, gain, filter, or print format (regardless of the plot format configuration setting) of the acquired ECG, use a right mouse click over the acquired ECG (see below).

The complete full disclosure data can be printed as a single lead by selecting the Print Full Disclosure  icon. Waveform data reviewed on the screen can be selected and printed as a single lead of up to 60 minutes of data, depending on the amount of ECG data that has been acquired.

## Storage

ECGs are automatically saved to the database upon acquisition. If the current user has permission to review, the RScribe program will automatically restart in Review mode after ending the ECG acquisition session, with the first ECG captured in the session selected. When multiple timed ECGs are captured, they can be edited using the exam search functions.

## Change Settings

Many settings can be changed by clicking the right mouse button on areas of the display. The context menus may be different depending on the area selected. Some specific context menus are available for display speed, gain, filter settings and lead layout in the area of the window where that parameter is displayed. The context menu is also specific to the display area (e.g. the full disclosure window or the captured ECG window), but where appropriate, the settings may apply to all windows; for example, if you change the gain through the menu in the full disclosure window, the gain in the real time window is also changed.

Refer to the next section of this manual for a detailed description of the context menus allowing change.

# CONTEXT MENUS

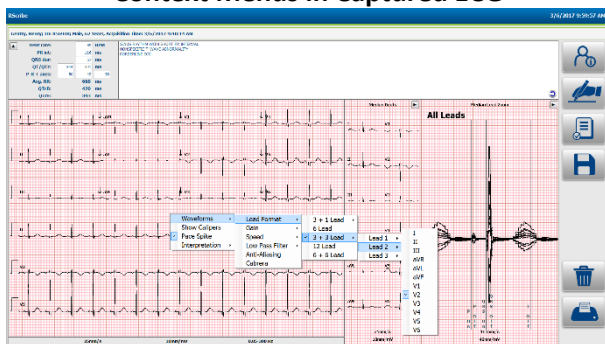
## Context Menu Settings

Many settings can be changed by clicking with the right mouse button on areas of the display. A so-called "context menu" will be displayed as seen in the examples below. The context menus may be different depending on the area selected. Some specific context menus are available for display speed, gain, filter settings and lead layout in the area of the window where that parameter is displayed. The context menu is also specific to the display area (e.g. the full disclosure window or the captured ECG window), but where appropriate, the settings may apply to all windows; for example, if you change the gain through the menu in the full disclosure window, the gain in the real time window is also changed. Some context menus activate specific tools, like measurement calipers.

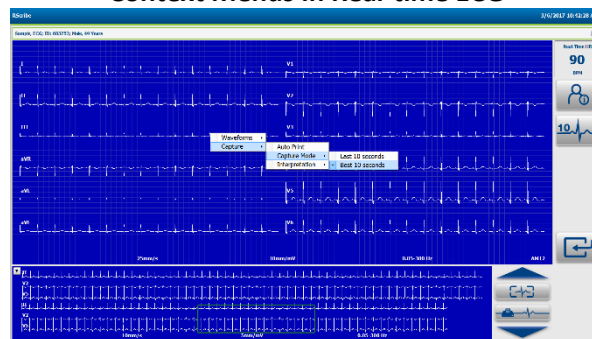
**NOTE:** Changes are maintained *ONLY* for the current sessions. Settings will revert back to the default settings with the next exam. Refer to the System Settings section in this manual to change the default settings.

**NOTE:** Some of the described menus may not be present if they were locked by the administrator in the RSCRIBE configuration settings.

Context Menu in Captured ECG



Context Menu in Real-time ECG



## Change Lead Format

- Right mouse click while the cursor is over the captured ECG waveform
- Select **Waveforms**
- Select **Lead Format**
- Select from: 3+1, 6, 3+3, 12, or 6+6

**NOTE:** In the real time display only 6+6 and 12 lead formats are available. It is recommended to choose a format that allows at least 10 seconds of real time ECG on the screen during acquisition.

## 3 + 1 Lead Format – Select Lead

- Right mouse click while the cursor is over the captured ECG waveform
- Select **Waveforms**
- Select **Lead Format**
- Select: **3+1**
- Select from: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, or V6



### 3 + 3 Lead Format – Select Leads

- Right mouse click while the cursor is over the captured ECG waveform
- Select **Waveforms**
- Select **Lead Format**
- Select: **3+3**
- Select from: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, or V6

*NOTE: 3+3 lead format requires a lead selection for each of the three leads presented.*

### Full Disclosure Change Lead Format

To change lead format in the full disclosure display:

- Right mouse click while the cursor is over the ECG waveform in the Full Disclosure window
- Select **Waveforms**
- Select **Lead Format**
- Select from: single lead by 3, single lead by 6, or 3 lead

*NOTE: Single lead by 3 displays three lines of ECG data in the full disclosure buffer. Single lead by 6 displays six lines of ECG data in the full disclosure buffer. Three lead displays two groups of three leads in the full disclosure buffer. The amount of data displayed is dependent on the size of the display and the ECG sweep speed selected.*

### Full Disclosure Single-lead Format – Change Lead

To change the full disclosure lead to a single-lead format:

- Right mouse click while the cursor is over the ECG waveform in the Full Disclosure window
- Select **Waveforms**
- Select **Single Lead Format**
- Select from: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, or V6

### Full Disclosure Three-lead Format – Change Leads

To change the full disclosure lead to a 3-lead format:

- Right mouse click while the cursor is over the ECG waveform in the Full Disclosure window
- Select **Three Lead Format**
- Select from: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, or V6

*NOTE: Three-lead format requires a lead selection for each of the three leads presented.*

### Full Disclosure Change Print Lead

To change the full disclosure print lead:

- Right mouse click while the cursor is over the ECG waveform in the Full Disclosure window
- Select **Print Lead**
- Select from: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, or V6

### Change the ECG Presentation Gain

- Right mouse click while the cursor is over the real-time or captured ECG waveform
- Select **Waveforms**
- Select **Gain**
- Select from: 2.5 mm/mV, 5 mm/mV, 10mm/mV, or 20 mm/mV
- Gain displays and prints at the bottom of the ECG

*NOTE: A shortcut to this menu is available when you right-click on the current gain display of the window. Different gains are available in the median and full disclosure windows.*

### Change the ECG Presentation Speed

- Right mouse click while the cursor is over the real-time or captured ECG waveform
- Select **Waveforms**
- Select **Speed**
- Select from: 5 mm/s, 10 mm/s, 25mm/s, or 50 mm/s (real-time only)
- Select from: 25mm/s or 50mm/s in the captured ECG waveform
- Gain displays and prints at the bottom of the ECG

*NOTE: A shortcut to this menu is available when you right-click on the current speed display of the window. Different speeds are available in the median and full disclosure windows.*

### Change ECG Low Pass Filter

- Right mouse click while the cursor is over the real-time or captured ECG waveform
- Select **Waveforms**
- Select **Low Pass Filter**
- Select from: 0.05 – 40 Hz, 0.05 – 150 Hz, or 0.05 – 300 Hz



**WARNING:** When the 40 Hz filter is used, the frequency response requirement for diagnostic ECG equipment cannot be met. The 40 Hz filter significantly reduces high-frequency components of the ECG and pacemaker spike amplitudes, and is recommended only if high-frequency noise cannot be reduced by proper procedures.

*NOTE: A filter setting lower than 150 Hz will reduce the visibility of fast transients in the ECG like pacemaker spikes or fast notches. For pediatric ECGs a 300 Hz setting is recommended. Filter settings apply only to displayed and printed data. Data is stored in unfiltered format.*

*NOTE: The High Pass filter (or base line filter), indicated by the number "0.05" cannot be changed. RSCRIBE automatically implements a high performance base line filter that does not distort the ECG waveform. High Pass filters that do distort the ECG waveform are not available.*

### Apply Anti-Aliasing to the ECG Display

- Right mouse click while the cursor is over the real-time or captured ECG waveform
- Select **Waveforms**
- Select **Anti-Aliasing**

*NOTE: Anti aliasing reduces slightly the "staircase" effect due to individual pixels in digital monitors, but may put a strain on low performance computers.*

### Change AC Filter on the Real-time ECG

- Right mouse click while the cursor is over the real time ECG waveform
- Select **Waveforms**
- Select **AC Filter**
- Select from: None, 50 Hz, or 60 Hz

*NOTE: RSCRIBE removes 60 Hz or 50 Hz interference. The setting you select depends on the line frequency in your country. For example, use the 60 Hz setting in the U.S. If the setting is correct but you still see mains interference, check the electrode connections, mains interference sources like transformers or motors close to the patient, and the connection to the safety ground of the computer. Try operating from battery power if needed.*

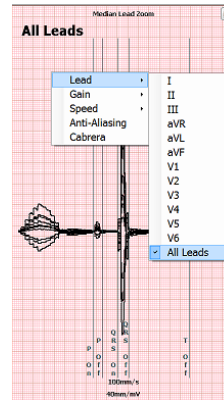


### Change ECG Presentation To or From Cabrera Format

- Right mouse click while the cursor is on the ECG waveform.
- Select Waveforms
- Select or unselect

### Change Median Zoomed Lead in ECG Review Mode

- Right mouse click while the cursor is over the Median Lead Zoom ECG
- Select **Lead**
- Select from: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6 , or All leads (all 12 leads superimposed)



### Switch Between Best Ten and Last 10 Seconds Capture in Real-Time ECG Mode

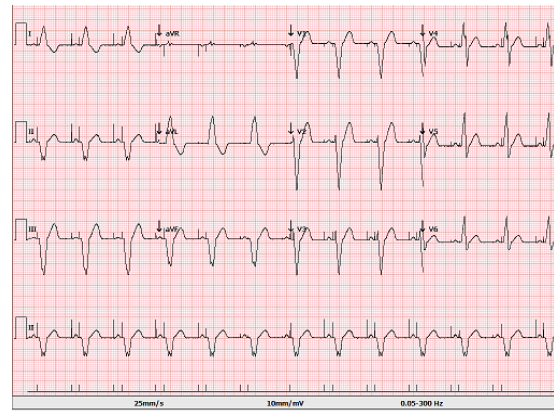
- Right mouse click while the cursor is over the real-time ECG waveform
- Select **Capture**
- Select **Capture Mode**
- Select from: Best 10 or Last 10

**NOTE:** Defines whether or not the RSCRIBE will automatically capture the 10 seconds ECG with the lowest noise level from the full disclosure buffer, or the last 10 seconds of data when the ECG button is selected.

### Print Pace Spike Channel

- Right mouse click while the cursor is over the acquired ECG waveform
- Select **Pace Spike** on or off

**NOTE:** When Pacer Spike is selected small tick marks will appear at the bottom of the ECG printout where each pacemaker spike was detected by RSCRIBE.



### Display and Print Average RR Interval

- Right mouse click while the cursor is over the acquired ECG waveform
- Select **Interpretation**
- Select **Avg RR** on or off

### Display and Print QTcB (Bazett)

- Right mouse click while the cursor is over the acquired ECG waveform
- Select **Interpretation**
- Select **QTcB** on or off

### Display and Print QTcF (Fridericia)

- Right mouse click while the cursor is over the acquired ECG waveform
- Select **Interpretation**
- Select **QTcF** on or off

**NOTE:** Welch Allyn VERITAS calculates by default the QTc with a linear correction method for average RR-interval similar to the Framingham method. In addition it is possible to display and print the QTc corrected with the Bazett or Fridericia correction methods.

### Print Automatic Interpretation Text

- Right mouse click while the cursor is over the acquired ECG waveform
- Select **Interpretation**
- Select **Print Interpretation** on or off

### Display and Print Automatic Interpretation Reasons Text

- Right mouse click while the cursor is over the real time ECG waveform
- Select **Capture**
- Select **Interpretation**
- Select **Reasons Text** on or off

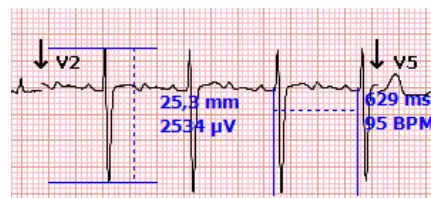
**NOTE:** Reasons statements indicate why a particular interpretive statement was printed. Reasons statements print enclosed in [square brackets] within the interpretive text if the interpretation option is turned on. Turning the reasons statement function on or off does not affect the measurements performed or the interpretive statements selected by the analysis program.

For Example Anteroseptal Infarct [40+ ms Q WAVE IN V1-V4] where “Anteroseptal Infarct” is the interpretive statement, and “40+ ms Q WAVE IN V1-V4” is the reason statement or explanation as to why the interpretive statement was printed.

### Display Calipers for on-screen measurement

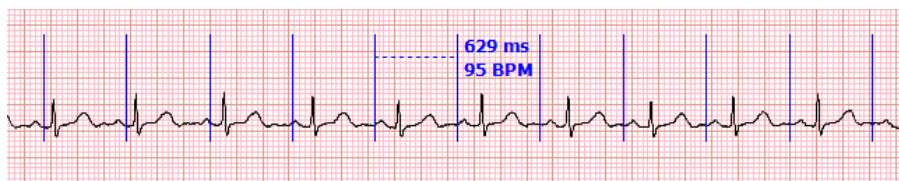
- Right mouse click while the cursor is over the acquired ECG waveform
- Select **Show Calipers** on or off

A caliper tool is available in the context menus when you right click anywhere in the main ECG window, and select Calipers. Calipers for amplitude and interval measurements will appear on the waveform.




Hover with the mouse over the caliper area. When you are close to the dotted line, the mouse cursor will change to a cross and you can now drag the caliper to desired position without changing the distance. When you are close to the solid line, the mouse cursor will change to a double arrow, and you can drag the single line to the desired position.

When you right click when the arrows or cross is present on the interval calipers, you can select **March Out** to repeat the interval caliper over the duration of the recording. You can use any of the vertical solid line to expand or shrink the calipers, and the horizontal dotted line to drag the whole series to a different position.



# EXAM SEARCH

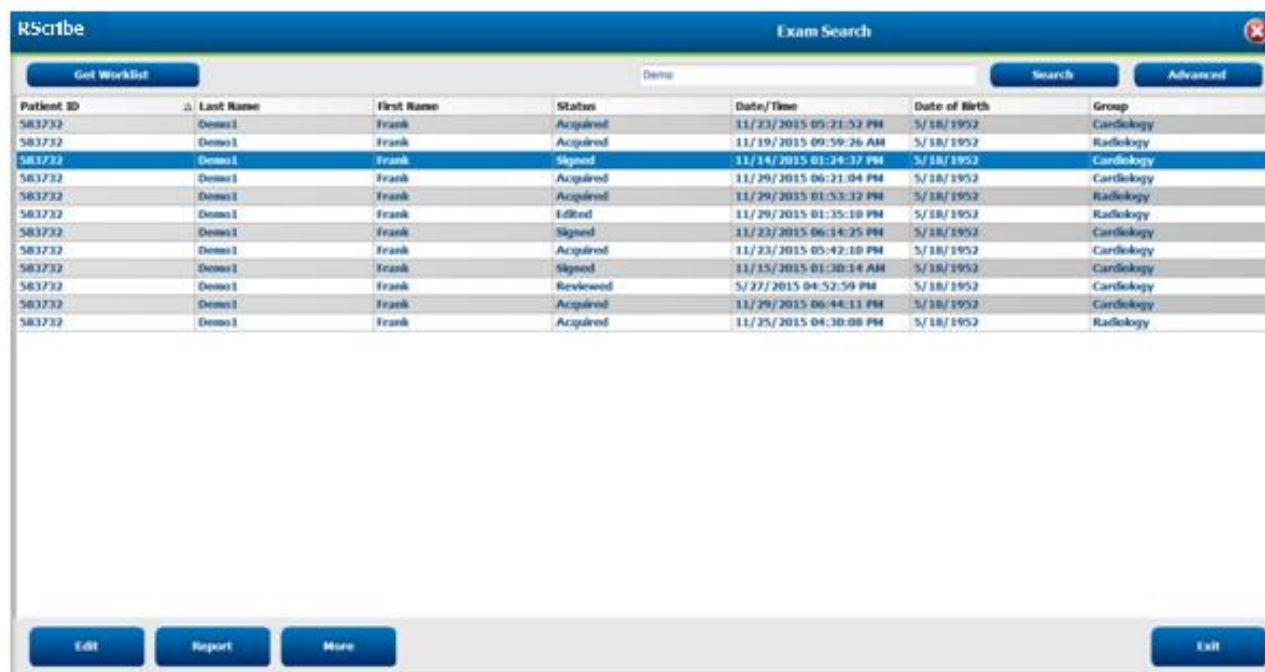
## Selecting ECG Reports to Review

The Exam Search icon  is available for users that will edit, review, and sign exams. Click on the icon to open a window allowing you to view the exams according to their status and your role.

The **Get Worklist** button will filter the list of exams according to the User Preferences for the logged in user.

A search field is available for entry of a patient name or ID number. When you enter one or more alphanumeric characters, all exams that start with those characters are displayed in a list when the **Search** button is clicked. Listed exams can be sorted by clicking any of the column headers.

When a complete last name, first name, or patient ID is entered in the search field and the **Search** button is clicked, all matching exams will appear in the list.



The screenshot shows the RSCRIBE Exam Search window. It features a search bar with a 'Search' button and an 'Advanced' button. Below the search bar is a table with the following columns: Patient ID, Last Name, First Name, Status, Date/Time, Date of Birth, and Group. The table contains 12 rows of data. At the bottom of the window, there are buttons for 'Edit', 'Report', 'More', and 'Exit'.

Patient ID	Last Name	First Name	Status	Date/Time	Date of Birth	Group
583732	Demo1	Frank	Acquired	11/23/2015 05:21:52 PM	5/18/1952	Cardiology
583732	Demo1	Frank	Acquired	11/19/2015 09:59:26 AM	5/18/1952	Radiology
583732	Demo1	Frank	Signed	11/14/2015 01:24:17 PM	5/18/1952	Cardiology
583732	Demo1	Frank	Acquired	11/29/2015 06:21:04 PM	5/18/1952	Cardiology
583732	Demo1	Frank	Acquired	11/29/2015 01:53:32 PM	5/18/1952	Radiology
583732	Demo1	Frank	Edited	11/29/2015 01:35:10 PM	5/18/1952	Radiology
583732	Demo1	Frank	Signed	11/23/2015 06:14:25 PM	5/18/1952	Cardiology
583732	Demo1	Frank	Acquired	11/23/2015 05:42:10 PM	5/18/1952	Cardiology
583732	Demo1	Frank	Acquired	11/15/2015 01:30:14 AM	5/18/1952	Cardiology
583732	Demo1	Frank	Reviewed	5/27/2015 04:52:59 PM	5/18/1952	Cardiology
583732	Demo1	Frank	Acquired	11/29/2015 06:44:11 PM	5/18/1952	Cardiology
583732	Demo1	Frank	Acquired	11/25/2015 04:30:08 PM	5/18/1952	Radiology

Highlight an exam in the list and then click the

- **Edit** button to open the exam for review and editing of measurements and demographics, or
- **Report** button to open the final report for review and printing, or
- **More** button to display more advanced selections explained below.



- **Copy Offline** button that allows an existing exam to be copied to an external drive using a browser for review at another RSCRIBE system.
- **Open Offline** button that allows an RSCRIBE system user to open an exam from another system by browsing to the location of the copied exam.

- **Transmit** button allows the exam results to be sent to the ELI Link destination defined in the system configuration settings. This selection is only enabled when the selected exam(s) has the associated export status enabled in the Workflow Config settings.
- **Reconcile** button is used to match an order to an exam that was performed before the order was available, or to correct information after the exam has been completed with incorrect patient demographics.
- **Archive** button is used to move the exam from the database to an external drive for long-term storage purposes.
- **Delete** button is used to permanently remove an exam or an order from the system database. The exam is not recoverable after performing this action.

Button actions are dependent on user permissions. Unavailable buttons will appear grayed.

Delete

## Advanced Search

For more sophisticated exam list filtering, click on the **Advanced** button. The identifier selections are relational to the selected filter and are dependent on your system configuration.

The exam state(s) are selected by checkbox as identifiers. Click the **Search** button after your filter and identifiers are selected. Click the **Clear** button to cancel and remove your entries from the search fields.

When finished, click the **Done** button to exit the advanced search selections and return to the main Exam Search window.

The screenshot shows the Rscribe Exam Search interface. On the left, there are checkboxes for 'Acquired', 'Edited', 'Reviewed', and 'Signed'. The 'Reviewed' and 'Signed' checkboxes are checked. Below these are search filters for Patient ID, Last Name, First Name, Group, and Date/Time, each with a dropdown menu and a text input field. The Patient ID filter is set to 'Start With' and '5'. The Last Name filter is set to 'Start With' and 'D'. The First Name filter is set to 'Equal To'. The Group filter is set to 'Equal To' and 'Cardiology'. The Date/Time filter is set to 'Equal To'. On the right, there are three buttons: 'Search', 'Clear', and 'Done'. Below the filters is a table with the following data:

Patient ID	Last Name	First Name	Status	Date/Time	Date of Birth	Group
583732	Demo1	Frank	Reviewed	5/27/2015 04:52:39 PM	5/18/1952	Cardiology
583732	Demo1	Frank	Signed	11/15/2015 01:30:14 AM	5/18/1952	Cardiology
583732	Demo1	Frank	Signed	11/23/2015 06:14:25 PM	5/18/1952	Cardiology
583732	Demo1	Frank	Signed	11/14/2015 01:24:37 PM	5/18/1952	Cardiology

### Exam State Identifiers

- Acquired
  - Checked if equal to
- Edited
  - Checked if equal to
- Reviewed
  - Checked if equal to
- Signed
  - Checked if equal to

### Exam Criteria Identifiers

- Patient ID
  - Equal To
  - Start With
- Last Name
  - Equal To
  - Start With
- First Name
  - Equal To
  - Start With
- Group
  - Equal To
  - Blank (All)
  - Any defined Group this user can access
- Date/Time
  - Equal To
  - Prior To
  - Later Than

## Edit a Resting ECG Report

When a report is selected from the Exam Search list by a user with review and signing permissions, it is presented on the screen similar to the one shown below. The Sign and Review button icons are not present for those without appropriate permissions.

Presence of the **Save** and **Review** button icons is dependent on how the administrator has configured workflow in system settings.

The Patient Information window can be opened and edited with selection of the **ID** icon button.

If the user agrees with the interpretation statements, the ECG can be saved, marked as reviewed, or signed. After selection of any of these icon buttons, the user is returned to the Exam Review list.

Sample ECG ID: 683733; Male, 49 Years, Acquisition Time: 3/2/2017 4:15:42 PM

3/2/2017 4:17:59 PM

UNCONFIRMED REPORT

Vent rate: 75 BPM  
PR int: 122 ms  
QRS dur: 53 ms  
QT/QTc: 384 / 413 ms  
P-R-T axes: 48 / 48 / 47  
Avg. RR: 792 ms  
QTcB: 431 ms  
QTcF: 415 ms


SINUS RHYTHM WITH OCCASIONAL SUPRAVENTRICULAR PREMATURE COMPLEXES  
MODERATE ST DEPRESSION  
ABNORMAL ECG


Patient ID  
Sign  
Review  
Save  
Print ECG

## Editing Measurements

There are two ways to edit the global measurement values:

### 1. Measurement Value Editing

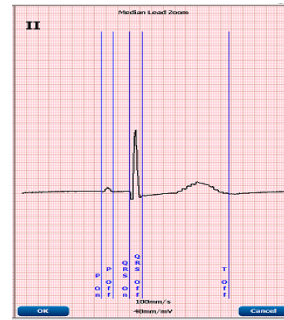
- Left-click in the value measurement field and enter the desired value.
- The values able to be edited are: Vent rate, QRS dur, QT/QTc, and the P-R-T axes. The grayed-out boxes cannot be edited here.
- The undo icon  in the bottom-right corner of the interpretation area can be selected to revert back to the measurement values before any editing changes were made, and when selected before saving the ECG.

Vent rate:	71	BPM
PR int:	150	ms
QRS dur:	116	ms
QT/QTc:	416 / 439	ms
P-R-T axes:	42 / -63 / 90	
Avg. RR:	835	ms
QTcB:	455	ms
QTcF:	441	ms 

### 2. Editing Interval measurements using the Median Beat Calipers



- This method can be used for the PR-interval, QRS duration, and QT duration editing
- Double-click in the Median Lead Zoom window. Measurement calipers are now active in this window.
- Drag the calipers to the desired position. Involved and related interval measurements will be automatically recalculated.
- Select **Cancel** to leave the editing process without saving.
- Select **OK** to complete the editing process



*NOTE: Interval measurements can also be edited using the interval caliper tool. See next page for details.*

## Settings

Many settings can be changed using context menus. Right click the mouse on any part of the ECG tracing for the following settings:

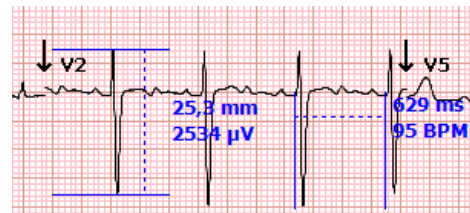
- Change the waveform presentation
- Print pacemaker spikes
- Print interpretation

See the *Context Menus* section in this manual for a complete description of the context menus.

## Measurement caliper tool

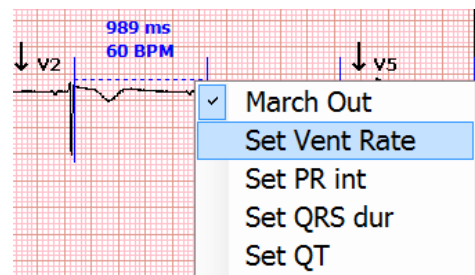
A caliper tool is available in the context menus when you right click anywhere in the main ECG window, and select **Show Calipers**.

Calipers for amplitude and duration measurements will appear on the waveform.

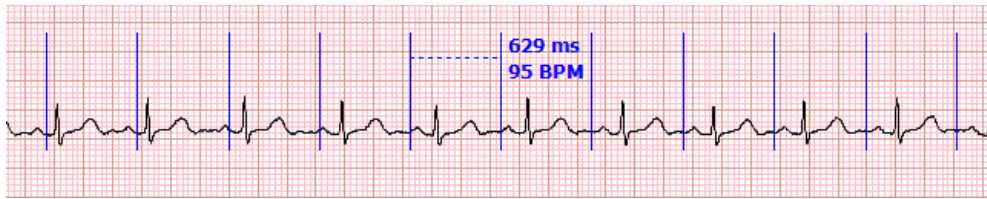


Hover with the mouse over the caliper area. When you are close to the dotted line, the mouse cursor will change to a cross and you can now click and drag the caliper to a desired position without changing the distance.


When you are close to the vertical line, the mouse cursor will change to a double arrow, and you can then drag the vertical line to a desired position.




When you right click when the arrows or cross is present on the interval calipers, a special context menu appears that allows you to use the displayed caliper value to modify the ECG interval measurements. You can also select **March Out** to repeat the interval caliper over the duration of the recording. You can use any of the vertical solid lines to expand or shrink the marching calipers, and the horizontal dotted line to drag the whole series to a different position.



### Editing Patient Information

Use the ID  button icon at the right to edit patient and exam demographic information. Only height, weight, admission ID, medications, notes, referring physician, location and acquisition date/time can be edited.


### Printing the Report

Use the Print ECG  button icon to the right to print the ECG in the currently displayed format on the default Windows printer. Note that the state of the exam is not yet updated at this point, so the previous state of the ECG (e.g. Unconfirmed report) will be printed.

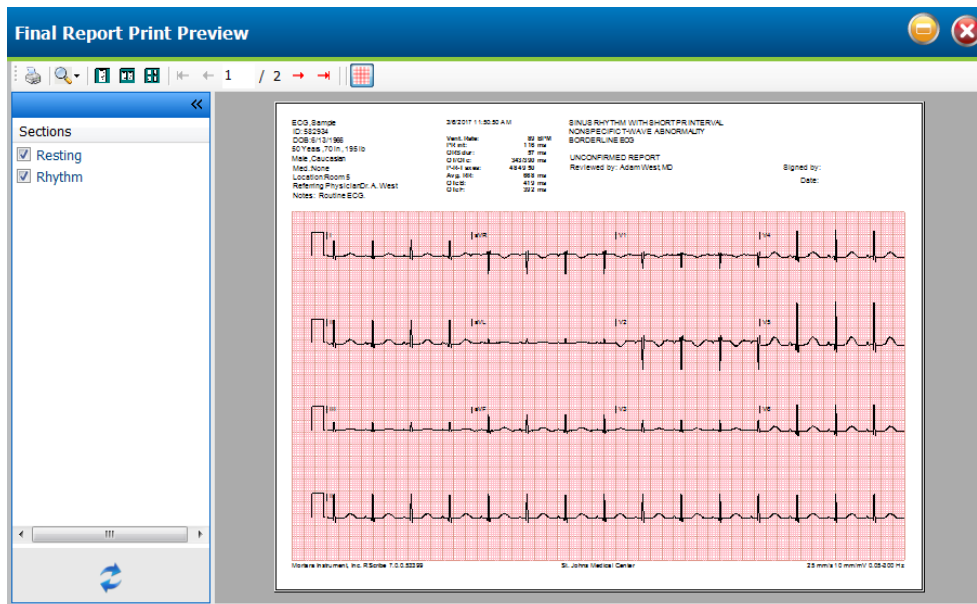
### Complete the Editing process

- Select **Save** to complete the editing process and return to the Exam Review list.
  - ECG is saved with an acquired status if not previously marked as reviewed or signed.
- Select **Review** to mark the ECG status as Reviewed and return to the Exam Review list.
  - User is prompted to enter the reviewer's name.
- Select **Sign** to mark the ECG status as Signed and return to the Exam Review list.
  - User is prompted to enter signer's name or signing authority depending on system configuration.

### Report Print Preview

To open a preview of the ECG report that has been reviewed or signed, select the **Report**  button icon in Exam Search. A preview is generated and the first report page is displayed.

## Icon Tool Bar



Use the printer icon to open a Windows' printer dialog and choose defined printers with properties, print range, and number of copies. To print the report, select **OK**.

Use the magnifying glass icon to choose **Auto** to fit the window or a percentage size for display.

Use the page icons to select a single-page or two-page preview.

The number of report pages is shown as xx / xx (displayed page number per total pages). The red arrow keys allow you to preview the next page or the previous page, as well as move to the last page or the first page.

Use the pink grid icon to toggle the ECG grid background on or off. An X appears when the background is off.

## Sections

Use the checkboxes at the left of the display to choose sections for inclusion or exclusion in the final report. Select the arrows in the bottom left corner of the display to refresh the displayed report after a change is made. The "Resting" section will print the predefined 12-lead ECG report with demographic information, measurements, interpretation and signature block.


The "Rhythm" section prints a 12-lead rhythm strip with summarized patient information and no measurements and interpretation. This section is enabled in the configuration settings by the administrator and may not be present.

## Exit the Print Preview

Click on the red **X** to close the report preview and return to the previous display.



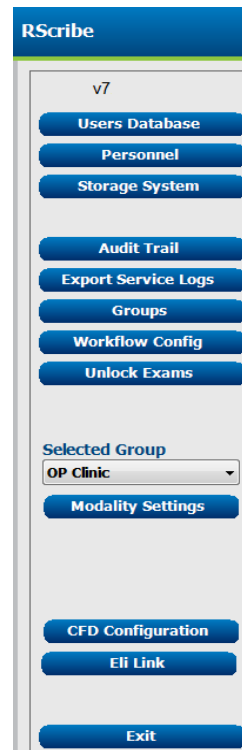
# SYSTEM SETTINGS

Use the System Configuration icon  on the main screen to enter the system configuration menus

The IT and Clinical Administrator can select the System Configuration icon to enter the RScript administrative functions. All other users can enter this menu to access the Export Service Log task only.

A list of administrative task buttons is presented to:

- Manage user accounts
- Manage personnel lists
- Manage Groups
- Manage archived exams
- View audit trail logs
- Export service logs for troubleshooting purposes
- Configure system-wide modality settings
- Configure ELI Link for DICOM connectivity, XML, and PDF file exchange
- Configure workflow
- Unlock exams
- Configure patient demographics fields



## Manage User Accounts and Personnel

### User's Database

The IT administrator will select **Users Database** to create new or delete user accounts, reset user passwords, assign roles (permissions) and groups for each user, and assign personnel entries for that user's selection. When a single sign-on is used, no user account and password creation is needed.

User ID	Username	Name	Roles
1	admin		IT Administrator, Clinical Admin, Schedule Procedures, Patient Hookup, Prepare Report, Review and Edit Report, Sign Report, Edit
2	Doctor1	Dr. Williamson	Clinical Admin, Prepare Report, Review and Edit Report, Sign Report, Edit Conclusions, Export Report, View Exams/Reports
3	Doctor2	Dr. Fuller	Prepare Report, Review and Edit Report, Sign Report, Edit Conclusions, Export Report, View Exams/Reports
4	Doctor3	Dr. Fredericks	Prepare Report, Review and Edit Report, Sign Report, Edit Conclusions, Export Report, View Exams/Reports
5	RN1	Mary Adams	Clinical Admin, Schedule Procedures, Patient Hookup, Prepare Report, Review and Edit Report, Edit Conclusions, Export Report, View
6	Tech6	Robert Cole, RCVT	Schedule Procedures, Patient Hookup, Prepare Report, View Exams/Reports
7	Tech7	Hannah Esteban, CVT	Patient Hookup, Prepare Report, Export Report, View Exams/Reports
8	Tech8	Norman Kochar, CCVT	Schedule Procedures, Patient Hookup, Prepare Report, Export Report, View Exams/Reports
9	PA9	Roband Parker, PA	Clinical Admin, Schedule Procedures, Patient Hookup, Prepare Report, Review and Edit Report, Edit Conclusions, Export Report, View
10	NP10	Kathleen Reemer, Nurse-Practitioner	IT Administrator, Clinical Admin, Schedule Procedures, Patient Hookup, Prepare Report, Review and Edit Report, Edit Conclusions,

### Personnel

**Personnel** is selected to add personnel that will be available in the Patient Information, Summary, and the Finalize Exam Update windows. Listed personnel can be assigned to each user account and will appear as selections for the logged-in user and in the appropriate final report fields.

Printed Name	Staff ID#	Enabled	In Reviewer List	In Technician List	In Approver List	In Attending Phys List
Dr. Williamson	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Dr. Fuller	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Dr. Fredericks	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Dr. Coburn	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mary Adams, RN	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Robert Cole, RCVT	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hannah Esteban, CVT	7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Norman Kochar, CCVT	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Roband Parker, PA	9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Kathleen Reemer, NP	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## New User

Selection of the **New** button within the Users Database window will open the New User dialog, similar to the window to the right.

*Tip: It is recommended to complete the Personnel list before adding Users so they can be selected as New Users are added.*

The name entered in the Display Name field will appear on the RScribe display when that user logs in.

The login password is entered and repeated.

Roles for this user, Personnel that will populate drop-down lists for this user, and Groups that this user will have access to are checked.

*Tip: Refer to [User Role Assignment Table](#).*

## Manage/Create Groups

Groups allow the IT administrator to group exams according to user access, reporting preferences (modality settings) and file exchange preferences. Any user can be assigned to multiple groups. A group definition can be copied and saved with a new name to create a second group, copying all settings and preferences of the existing group.

- Select the **Groups** button to make changes. Any created group can be copied, renamed and modified.
- To create a new group, highlight the group you would like to copy, select **New Group**, and enter the new **Group Name**. A new group will be created with the settings of the highlighted group.
- Select the users under the **Group User List** that may have access to the highlighted group. The **Select All** and **Deselect All** selection can be used to enable or disable all users.

If you want to rename a group without creating a new one, highlight the group, and enter a Group Name

- Select **Save Group** to save your changes.

The Default group (first in the list) can only be renamed. An unlimited number of new groups can be created and modified.

**Group Management**

**New Group**
**Delete Group**

- Cardiology
- OP Clinic
- Radiology

**Group Name:**

**Group User List:**

Select All/Deselect All

- admin
- Doctor1
- Doctor2
- Doctor3
- NP10
- PA9
- RN1
- Tech6
- Tech7
- Tech8

**Save Group**

RSubscribe Modality Settings, CFD Configuration, and ELI Link configurations can be uniquely defined for each individual group.

Groups, with exception of the Default group, can be deleted. All exams present in the database for the deleted group will be automatically assigned to the default group.

## Modality Settings

Modality Settings define all RSubscribe modality specific default values that do not change on a daily or patient-to-patient basis. Most of these settings can be modified within the RSubscribe modality for a single exam, but most of these default conditions will rarely need to change. The Modality settings may be "Locked" by the administrator, meaning that the setting will not be available from within the modality. Use the "Lock" checkbox to the right of each setting to exclude it from the settings available from within the modality.

Modality settings and file exchange settings are Group dependent. Ensure that the desired group is selected from the drop-down list before proceeding.

Select the tab you wish to modify and click on **Save Changes** to apply or **Discard Changes** to cancel changes before exiting.

## Waveforms Tab

RSCRIBE
System Configuration

v7.  
UDI:

[Users Database](#)

[Personnel](#)

[Storage System](#)

[Audit Trail](#)

[Export Service Logs](#)

[Groups](#)

[Workflow Config](#)

[Unlock Exams](#)

Selected Group  
Cardiology

[Modality Settings](#)

[CFD Configuration](#)

[ELI Link](#)

[Exit](#)

Resting

Waveforms
Acquire
Full Disclosure
Resting ECG

**Waveforms**

	Lock
Gain <span style="float: right;">10mm/mV</span>	<input type="checkbox"/>
Anti-Aliasing <span style="float: right;">On</span>	<input type="checkbox"/>
Low Pass Filter <span style="float: right;">0.05-300 Hz</span>	<input type="checkbox"/>
AC Filter <span style="float: right;">60 Hz</span>	<input type="checkbox"/>
Cabrera <span style="float: right;">Off</span>	<input checked="" type="checkbox"/>

**Median Zoom**

	Lock
Lead <span style="float: right;">II</span>	<input type="checkbox"/>
Speed <span style="float: right;">100mm/s</span>	<input type="checkbox"/>
Gain <span style="float: right;">40mm/mV</span>	<input type="checkbox"/>

[Save Changes](#)
[Discard Changes](#)

## Waveforms

### Gain

- To change default ECG gain:
  - Position the left mouse key over the **Gain**
  - Select **Gain**
  - Select from: 2.5 mm/mV, 5 mm/mV, 10mm/mV, or 20 mm/mV
  - Gain displays and prints at the bottom of the ECG

### Anti-aliasing

- To apply anti-aliasing to ECG view:
  - Select **Anti-aliasing**
  - Choices: On, Off

*NOTE: Anti aliasing reduces slightly the "staircase" effect due to individual pixels in digital monitors, but may put a strain on low performance computers.*

### Low Pass Filter

- To change default ECG low pass filter:
  - Select **Low Pass Filter**
  - Select from: 0.05 – 40 Hz, 0.05 – 150 Hz, or 0.05 – 300 Hz



**WARNING:** When the 40 Hz filter is used, the frequency response requirement for diagnostic ECG equipment cannot be met. The 40 Hz filter significantly reduces high-frequency components of the ECG and pacemaker spike amplitudes, and is recommended only if high-frequency noise cannot be reduced by proper procedures.

**NOTE:** A filter setting lower than 150 Hz will reduce the visibility of fast transients in the ECG like pacemaker spikes or fast notches. For pediatric ECGs a 300 Hz setting is recommended. Filter settings apply only to displayed and printed data. Data is stored in unfiltered format.

**NOTE:** The High Pass filter (or base line filter), indicated by the number "0.05" cannot be changed. RScribe automatically implements a high-performance base line filter that does not distort the ECG waveform. High Pass filters that do distort the ECG waveform are not available.

### AC Filter

- To change default ECG AC filter:
  - Select **AC Filter**
  - Select from: None, 50 Hz, or 60 Hz

**NOTE:** RScribe removes 60 Hz or 50 Hz interference. The setting you select depends on the line frequency in your country. For example, use the 60 Hz setting in the U.S. If the setting is correct but you still see mains interference, check the electrode connections, mains interference sources like transformers or motors close to the patient, and the connection to the safety ground of the computer. Try operating from battery power if needed.

### Cabrera

- To change default ECG to Cabrera:
  - Left mouse click on the **Cabrera** icon
  - Choices: On, Off

**NOTE:** Using the lock indicator to the right of this selection can be enabled to hide this choice from the technician, permitting only unlocked choices.

## Median Zoom

### Lead

- To change default median ECG lead format display:
  - Select **Lead**
  - Choices: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6, All leads (all 12 leads superimposed)

### Speed

- To change default speed on the display:
  - Select **Speed**
  - Choices: 100 mm/s, 200 mm/s

### Gain

- To change default ECG gain:
  - Select **Gain**
  - Choices: 10, 20, 40, 80 mm/Mv

## Acquire Tab

This Tab is for the default settings of the real time acquisition function of RSCRIBE.

Waveforms	Acquire	Full Disclosure	Resting ECG
<b>Main</b>			
Auto Print			Lock
Off			<input type="checkbox"/>
Capture Mode			Lock
Last 10 seconds			<input type="checkbox"/>
Auto Capture Time (mm:ss)			Lock
2 : 00			<input type="checkbox"/>
<b>Real-Time</b>			
Speed			Lock
25mm/s			<input type="checkbox"/>
Lead Format			Lock
12 by 1			<input type="checkbox"/>

### Main

#### Auto Print

- Select **Auto Print**
- Choices: On, Off

*NOTE: Defines whether or not RSCRIBE will automatically print an unconfirmed ECG after a timed or manual capture. Manual printout is always possible.*

#### Capture Mode

- Select **Capture Mode**
- Choices: Best 10 seconds, Last 10 seconds

*NOTE: Defines whether or not the RSCRIBE will automatically capture the 10-second ECG with the lowest noise level from the full disclosure buffer, or the last 10 seconds of data when the ECG button is selected.*

#### Auto Capture Time (mm:ss)

- Set from: a minimum of 20 seconds up to 59-minutes and 59-seconds.

*NOTE: Defines the time intervals in which the ECG will automatically be acquired once "Timed ECG Capture" is selected.*

### Real Time

#### Speed

- Select **Speed**
- Choices: 5, 10, 25, 50 mm/sec

#### Lead Format

- Select **Lead**
- Choices: 12 by 1, 6 by 2

*NOTE: In the real time display only 6+6 and 12 lead formats are available. It is recommended to choose a format that allows at least 10 seconds of real time ECG on the screen during acquisition.*

## Full Disclosure Tab

This Tab is for the default settings of the full disclosure buffer at the bottom of the acquisition screen.

Waveforms	Acquire	Full Disclosure	Resting ECG
<b>Full Disclosure</b>			
	<b>Speed</b>	10mm/s	<input type="checkbox"/>
	<b>Lead Format</b>	Three Lead	<input type="checkbox"/>
	Single Lead Format - Lead	II	<input type="checkbox"/>
	Three Lead Format - Lead 1	II	<input type="checkbox"/>
	Three Lead Format - Lead 2	V2	<input type="checkbox"/>
	Three Lead Format - Lead 3	V5	<input type="checkbox"/>
	Print Lead	II	<input type="checkbox"/>
	Buffer Size	30 Minutes	

### Speed

- Select **Speed**
- Choices: 5, 10, 25, 50 mm/s

### Lead Format

- Select **Lead Format**
- Choices: single lead by 3, single lead by 6, or 3 lead

***NOTE:** Single lead by 3 displays three lines of ECG data in the full disclosure buffer. Single lead by 6 displays six lines of ECG data in the full disclosure buffer. Three lead displays two groups of three leads in the full disclosure buffer. The amount of data displayed is dependent on the size of the display and the ECG sweep speed selected.*

### Single Lead Format - Lead

- Select **Single Lead Format**
- Choices: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6

### Three Lead Format - Lead 1, 2 or 3

- Select **Three Lead Format**
- Choices: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6

***NOTE:** The three-lead format requires a lead selection for each of the three leads presented.*

---

**Print Lead**

- Select **Print Lead**
- Choices: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6

***NOTE:** Use Print Lead to select the lead printed on full disclosure printouts.*

**Buffer Size**

- Select **Buffer Size**
- Choices: 5, 10, 20, 30, 45, 60 minutes

***NOTE:** Use the Buffer Size to select the total amount of acquisition time permitted in the full disclosure memory. A warning message will display when the selected time limit has been reached, and acquisition terminated.*



## Resting ECG Tab

This Tab is for the default settings of the captured ECG waveform and printouts.

Waveforms	Acquire	Full Disclosure	Resting ECG
<b>Resting ECG</b>			
			<b>Lock</b>
	<b>Speed</b>	25mm/s	<input type="checkbox"/>
	<b>Lead Format</b>	3 + 1 Lead	<input type="checkbox"/>
	<b>3 + 1 Lead Format - Lead</b>	II	<input type="checkbox"/>
	<b>3 + 3 Lead Format - Lead 1</b>	II	<input type="checkbox"/>
	<b>3 + 3 Lead Format - Lead 2</b>	V2	<input type="checkbox"/>
	<b>3 + 3 Lead Format - Lead 3</b>	V5	<input type="checkbox"/>
	<b>Pace Spike</b>	Off	<input type="checkbox"/>
	<b>Avg. RR</b>	On	<input type="checkbox"/>
	<b>QTcB</b>	On	<input type="checkbox"/>
	<b>QTcF</b>	On	<input type="checkbox"/>
	<b>Print Interpretation</b>	On	<input type="checkbox"/>
	<b>Reasons Text</b>	Off	<input type="checkbox"/>

### Speed

- Select **Speed**
- Choices: 25, 50 mm/sec

### Lead Format

- Select **Lead Format**
- Choices: 3+1, 6, 3+3, 12, 6+6

### 3 + 1 Lead Format - Lead

- Select **3+1 Lead Format**
- Choices: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6

### 3 + 3 Lead Format - Lead

- Select **3+3 Lead Format**
- Choices: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6

*NOTE: 3+3 lead format requires a lead selection for each of the three leads presented.*

### Pace Spike

- Select **Pace Spike**
- Choices: On, Off

*NOTE: When Pace Spike is on, pacemaker spikes will be visible on the waveform display and at the bottom of the page on captured ECG printouts.*

### Average RR

- Select **Avg. RR**
- Choices: On, Off

*NOTE: Use this option to display an averaged RR value on the report.*

#### QTcB (Bazett)

- Select **QTcB**
- Choices: On, Off

#### QTcF (Fridericia)

- Select **QTcF**
- Choices: On, Off

*NOTE: Welch Allyn VERITAS calculates by default the QTc with a linear correction method for average RR-interval similar to the Framingham method. In addition it is possible to display and print the QTc corrected with the Bazett or Fridericia correction methods.*

#### Print Interpretation

- Select **Print Interpretation**
- Choices: On, Off

#### Reasons Text

- Select **Reasons Text**
- Choices: On, Off

*NOTE: Reasons statements indicate why a particular interpretive statement was printed. Reasons statements print enclosed in [square brackets] within the interpretive text if the interpretation option is turned on. Turning the reasons statement function on or off does not affect the measurements performed or the interpretive statements selected by the analysis program.*

*For Example:*

*Anteroseptal Infarct [40+ ms Q WAVE IN V1-V4] where “Anteroseptal Infarct” is the interpretive statement and “40+ ms Q WAVE IN V1-V4” is the reason statement or explanation as to why the interpretive statement was included.*

## CFD Configuration

A long, custom, or short format for displayed items and report contents can be uniquely defined per Group. Select the **CFD Configuration** button to display the Custom Format Definition Template drop-down list. Choose the Long, Custom, or Short template for the selected group and then click the **Save Changes** button, or the **Discard Changes** button to cancel any changes.

The **Long** format contains all available demographics.

The **Custom** format has been created through use of the ELI Link tool. Refer to the ELI Link administrator manual, part number 9515-166-50-ENG, for information regarding Custom IDs.

*Note:* Custom IDs are only available when connected to ELI Link and when an order is used to populate patient demographics. If no order, the Short format is defaulted.

The **Short** format excludes the patient history and contact information in the report summary.

**Selected Group**  
 Cardiology Dept. ▼

CFD Configuration  
 Custom Format Definition Template

Custom  
 Short  
 Custom  
 Long

Save Changes Discard Changes

### Long CFD      Custom CFD      Short CFD

Last Name: \_\_\_\_\_  
 First Name: \_\_\_\_\_  
 Middle Name: \_\_\_\_\_  
 Gender: Unknown ▼  
 DOB: \_\_\_\_\_  
 Age: \_\_\_\_\_ Years  
 Height: \_\_\_\_\_ in  
 Weight: \_\_\_\_\_ lb  
 Race: Unknown ▼  
 ID: \_\_\_\_\_  
 Second ID: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_  
 Postal Code: \_\_\_\_\_  
 State: \_\_\_\_\_  
 Country: \_\_\_\_\_  
 Home Telephone: \_\_\_\_\_  
 Work Telephone: \_\_\_\_\_  
 Mobile Telephone: \_\_\_\_\_  
 Email Address: \_\_\_\_\_  
 Anghia: Unknown ▼  
 History of MI: Unknown ▼  
 Prior Cath: Unknown ▼  
 Prior CABG: Unknown ▼  
 Smoking: Unknown ▼  
 Diabetic: Unknown ▼  
 Family History: Unknown ▼  
 Pacemaker

Last Name: \_\_\_\_\_  
 First Name: \_\_\_\_\_  
 Middle Name: \_\_\_\_\_  
 Gender: Unknown ▼  
 DOB: \_\_\_\_\_  
 Age: \_\_\_\_\_ Years  
 Height: \_\_\_\_\_ in  
 Weight: \_\_\_\_\_ lb  
 Race: Unknown ▼  
 ID: \_\_\_\_\_  
 Second ID: \_\_\_\_\_  
 Anghia: Unknown ▼  
 History of MI: Unknown ▼  
 Prior Cath: Unknown ▼  
 Prior CABG: Unknown ▼  
 Smoking: Unknown ▼  
 Diabetic: Unknown ▼  
 Family History: Unknown ▼  
 Pacemaker   
 Medications: \_\_\_\_\_

Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_  
 Middle Name: \_\_\_\_\_ Gender: Unknown ▼ Race: Unknown ▼  
 DOB: \_\_\_\_\_ Age: \_\_\_\_\_ Years  
 Height: \_\_\_\_\_ in Weight: \_\_\_\_\_ lb  
 ID: \_\_\_\_\_ Second ID: \_\_\_\_\_  
 Pacemaker   
 Medications: \_\_\_\_\_  
 Aspirin

## ELI Link Configuration

RSubscribe supports the ability to exchange information with DICOM systems, import orders from XML files, and export PDF and XML results to an external system via ELI Link. Available connectivity options are dependent on the RSubscribe system activated features. Refer to the *ELI Link Administrator Manual*, part number 9515-166-50-ENG, for information regarding installation and configuration of the ELI Link gateway service.

When using ELI Link connectivity, check the box to enable communication and enter appropriate information into the available fields.

The screenshot shows the 'System Configuration' window for 'RSubscribe'. The left sidebar contains navigation buttons for 'Users Database', 'Personnel', 'Storage System', 'Audit Trail', 'Export Service Logs', 'Groups', 'Workflow Config', 'Unlock Exams', 'Modality Settings', 'CFD Configuration', 'Eli Link', and 'Exit'. The 'Selected Group' is set to 'Cardiology'. The main configuration area is titled 'ELI Link Configuration' and includes a checked checkbox for 'Enable ELI Link Communication'. Below this are four input fields: 'Host Name or IP', 'Port Number' (with the value 5101), 'Site Number' (with the value 1), and 'Encryption Key'. At the bottom of the configuration area are two buttons: 'Save Changes' and 'Discard Changes'.

The following table describes the available ELI Link configuration settings:

Item	Description
<b>Host Name or IP</b>	<b>Entry field for the network name or IP address of the networked ELI Link service</b>
<b>Port Number</b>	<b>Entry field for the TCP port number for network communication with the ELI Link service</b>
<b>Site Number</b>	<b>Entry of a number will uniquely identify the RSubscribe that is communicating with the ELI Link service</b>
<b>Encryption Key</b>	<b>Entry field for use of a secret string shared between the ELI Link service and the RSubscribe</b>

Enter your desired settings and then click the **Save Changes** button, or the **Discard Changes** button to cancel any changes.

*Note:* If orders are used with RWrite in XML format and setup through ELI Link, XML order refresh must be checked in ELI Link or orders will not appear in the worklist in RWrite.

## Unlock Exams

RWrite internally tracks transitioning exams preventing the same exam to be processed by two or more users. When a second user attempts to access an exam in use, a message displays with notification that the exam is not currently available.

As a measure for recovering locked exams, administrative users can unlock an exam that resides on the same workstation by selecting **Unlock Exams**. Highlight the listed exam(s) and click on **Unlock**.

## Manage Archive Storage

The RWrite administrative user will manage storage system disks through selection of **Storage System**.

### Add Archive Location

Select **New Archive** button to define a path to the archive directory destination.

- Any external disk (e.g. NAS, USB, etc.) accessible from the RWrite central database is a candidate for becoming an archive volume.
- The archive path should be defined as a UNC path such as [\\ServerName\ShareName\Directory\](#)
- A Username, Password and Domain may be entered as needed to add the new storage disk to the Archive drive listing.

Select **Save Changes** button to create the archive location or **Discard Changes** button to exit this window without saving changes.

An archive path may also be deleted by highlighting the desired label and selecting the **Delete Archive** button. When selected, a prompt asking if you are sure you want to delete the selected archive is presented. Select **Yes** or **No**. All archived ECGs will remain at the destination until they are manually deleted.

Label	Path	Timestamp	Username
External HD Archive	\\ITDomain\FDrive\Data Archive\	11/14/2015 11:24:33 AM	
Network Archive	\\mikedomain\afsfer\Network Data Archive\	11/14/2015 11:28:11 AM	mortaluser

Drive Name	Drive Capacity
Fixed Drives	
C:\	337,4452 GB
E:\	11,9232 GB
F:\	909,2931 GB

The **Refresh Drive List** button is available to update the list of available drives.

## Recover Archived Exams

Administrative users can restore exams from the archive location to the RSCRIBE database through selection of **Archive Recovery** tab. Once selected, a window will open allowing a search of the Archive Name or the Archive Label.

To search by Archive Name, a letter or number combination may be entered to show exams that contain the characters. To search by Archive Label, the first letter of the label can be entered with the **Start With** description, or the entire Archive Label can be entered with the **Equal To** description. Select the **Search** button when ready. The **Clear** button can be selected to clear all search fields. Column headers can be selected to sort listed exams by that item.

To restore exams, highlight the desired exam(s) in the list and click on **Recover**.

Multiple exams can be restored by highlighting them followed by a single **Recover** button click.

**Storage System**

**Manage Archives**
**Archive Recovery**

Archive Name Contains

Archive Label Start With

**Search**

**Clear**

Archive Date Time	Archive Name	Archive Label	Archive Path
2:44 PM	Diane_Susan_resting003_Resting_Edited_2012-02-12T12-52-37-06...	Archive 1	G:\ArchiveForECG
2:44 PM	William_Gabe_resting002_Resting_Signed_2012-02-12T12-39-50-06...	Archive 1	G:\ArchiveForECG
2:44 PM	Michael_David_resting001_Resting_Edited_2012-02-12T12-25-13-06...	Archive 1	G:\ArchiveForECG

**Recover**

## Audit Trail Logs

The RSCRIBE administrative user will select **Audit Trail** to view the audit trail history. Selections for filter criteria are available to sort the listing by date, user, workstation, operation, or target (e.g. User, Patient, Exam, Conclusion, Locked Exams, User and System Settings). One or more filter criteria can be used to find audit trail information.

Results will display differences by comparing the XML statistics data before and after changes. A legend with colored highlighting will point to added, removed, changed, and moved information.

All configuration information, user information, patient demographic information, exam demographic information, textual conclusions, archive operations, and exam download requests are tracked by the audit trail with a date and time.

**System Configuration**

Date Time: Later Than 2/1/2017 Search Clear

User: Equal To

Workstation: Equal To hp2ua5070E51

Target: Equal To

Operation: Equal To

Date Time	User	Workstation	Target	Operation
2/18/2017 2:58:06 PM	Doctor1	hp2ua5070E51	Locked Exams	Delete
2/18/2017 2:58:06 PM	Doctor1	hp2ua5070E51	User Settings	Create
2/18/2017 2:58:06 PM	Doctor1	hp2ua5070E51	Conclusion	Edit
2/18/2017 2:58:06 PM	Doctor1	hp2ua5070E51	Exam	Edit
2/18/2017 2:57:38 PM	admin	hp2ua5070E51	Exam	Download
2/18/2017 2:57:38 PM	admin	hp2ua5070E51	Locked Exams	Create
2/18/2017 2:57:25 PM	admin	hp2ua5070E51	Locked Exams	Delete
2/18/2017 2:57:25 PM	admin	hp2ua5070E51	User Settings	Edit
2/18/2017 2:57:25 PM	admin	hp2ua5070E51	User Settings	Edit

**Legend:** added removed changed moved from moved to ignored

**Previous Data:**

```
<CustomFormatValues CustomFormatDefName="CorScribe CFD"
CustomFormatDefVersion="4">
<report>
<DataField DataType="DTBoolean"
FieldID="LegallySignedID"
FieldKey="84">
<FieldValue AutoCalc="false">
0
</FieldValue>
</DataField>
<DataField DataType="DTBoolean"
FieldID="ApprovedSignedID"
FieldKey="90">
<FieldValue AutoCalc="false">
0
</FieldValue>
</DataField>
</report>
</CustomFormatValues>
```

**Current Data:**

```
<CustomFormatValues CustomFormatDefName="CorScribe CFD"
CustomFormatDefVersion="4">
<report>
<DataField DataType="DTBoolean"
FieldID="LegallySignedID"
FieldKey="84">
<FieldValue AutoCalc="false">
1
</FieldValue>
</DataField>
<DataField DataType="DTBoolean"
FieldID="ApprovedSignedID"
FieldKey="90">
<FieldValue AutoCalc="false">
0
</FieldValue>
</DataField>
</report>
</CustomFormatValues>
```

## Service Logs

All RSCRIBE users have access to **Export Service Logs**. Selection of the button creates a Win-7 zipped file that can be sent to the desktop containing a copy of the system logged events.

The file named EMSysLog.xml.gz can be e-mailed to a Welch Allyn service representative for troubleshooting purposes.

## Configure Workflow

The RScript exam states are designed to follow typical user workflow. There are five possibilities with meanings defined below each state:

1. **ORDERED**  
The resting ECG exam is either scheduled by a user or an external scheduling system has sent an order.
2. **ACQUIRED**  
The resting ECG exam is completed at the RScript system and is ready for editing of measurements and select demographics if needed.
3. **EDITED**  
The resting ECG exam has been analyzed and saved with changes, ready for review by a physician.
4. **REVIEWED**  
The resting ECG exam has been reviewed and confirmed to be accurate by an authorized user (e.g. physician, fellow, clinician, etc.).
5. **SIGNED**  
The exam is reviewed and electronically signed by an authorized user. No further workflow processing is required.

### Workflow Config

A **Legal Signature** can be enabled by selecting **Yes** or disabled by selecting **No**. When legal signature is set to **Yes**, the user is prompted to enter their login password and ID.

Administrative users can configure the workflow to include all, or exclude some states through selection of **Modality Status** radio buttons.

- Select **All** to enable all five states.
- Select **No REVIEWED** to move the state from EDITED to SIGNED.
- Select **No EDITED/REVIEWED** to move the state from ACQUIRED to SIGNED.

Checkboxes under **Export Status** allow choices for Manual or Automatic export of the results when the state moves to Acquired, Edited, Reviewed or Signed. Any combination may be selected.

The screenshot shows the 'Workflow Config' interface with the following settings:

- Modality Status:** Radio buttons for 'All' (selected), 'No REVIEWED', and 'No EDITED/REVIEWED'.
- Export Status:** A table with columns 'Manual' and 'Automatic'.
 

	Manual	Automatic
Acquired:	<input type="checkbox"/>	<input type="checkbox"/>
Edited:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Reviewed:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Signed:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Legal Signature:** Radio buttons for 'Yes' (selected) and 'No'.
- Print Option:** Radio buttons for 'Always', 'Never', and 'If Signed' (selected). Below it is a 'Copies' spinner set to 1.

At the bottom are 'Save Changes' and 'Discard Changes' buttons.

A default **Print Option** with the number of automatic **Copies** from 1 to 9 can be defined to

- **Always** print automatically when moving to the next state
- **Never** print automatically
- Automatically print only **If Signed**



## No Legal Signature

When updating the exam to the signed state, the signature area will show the approver's name with a label of **Approved by:** in the final report.

## About the Legal Signature

The legal signature requires the user credentials prior to updating a resting ECG exam when changing to a signed state. When enabled, the user is prompted to authenticate with a user name and password when transitioning to the signed state. Authentication can be entered when a different user is currently logged in. When the correct credentials are not entered, the user will be notified with a message that the "Credentials supplied are not valid."

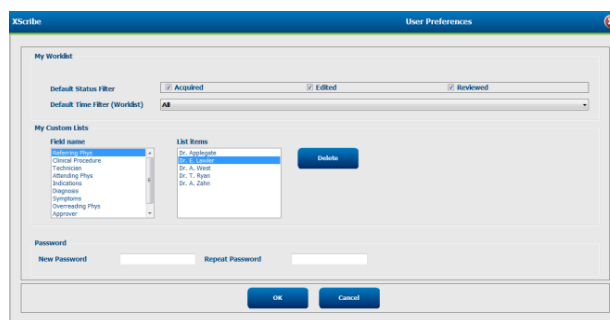
When the signing physician has been set up as an Attending Physician under Personnel, the printed name will appear in the RSCRIBE final report on the signature line following the **Electronically Signed by:** field label.

## User Preferences

Select the User Preferences icon to open the window. Set selections define the default criteria for the Get Worklist in the Search feature when the particular user is logged into RSCRIBE.

Set selections can be changed when the user selects the Advanced search selections.

The user can also change the password in this window when the system is not set up with a single sign-on.



All users have access to the User Preferences settings but may not have the Search feature available. Those users will only enter this window to change their own password.

There are three possible choices for the Worklist exam states that can be enabled or disabled by checkboxes. The choices are dependent on the workflow configuration modality status setting in that Edited or Review may not appear as selections.

1. Acquired
2. Edited
3. Reviewed

There are three choices for the default time filter for worklists.

1. All
2. Today
3. Last week

The user's custom lists can also be modified on this page. Some demographic data entry lists also accept free text which will be automatically added to the list for future use. "My Custom Lists" allows deletion of any list items you do not wish to use in the future.

The user can change his password on this page, only if "Single Sign On" is not used

When finished, select **OK** to save changes or **Cancel** to exit the window without saving changes.


RSCRIBE will present the default settings on any of the workstations that the user logs into.

## Report Configuration Tool

RScripte final reports can be configured with the practice name prior to using the system. The practice name is printed at the bottom of each ECG report. In addition, the system can be set up to add or omit a 10 s 12-lead rhythm strip to each ECG report.

The Report Configuration Tool is a separate program. Click on the Start menu from the RScripte workstation desktop. Choose "All Programs", "Welch Allyn" followed by "Report Configuration Tool". This will open a dialog window prompting a Group choice from a drop-down list. Each group that has been defined will have its own report configuration. Select the group.

**Report Template Layouts configuration**  
Design Report Template layout by adding & customizing header, Sections & footer.



Choose a report: Resting

**Sections**

Section Name	Hide
Resting	<input type="checkbox"/>
Rhythm	<input checked="" type="checkbox"/>

**Practice**

Practice Name:

Choose the **Resting** report from the top left. Enter the practice name at the bottom white space. Select the **Hide** checkbox if you do not want to print a rhythm strip with each ECG. You can use **Report Preview** to see a preview of what will appear on each report.

***NOTE:** As an individual ECG report is reviewed, rhythm strips can be manually added if "Hide" has been selected by default.*

Select **Next** and **Finish** to save the configuration for the selected group. Select another group to configure or **Exit** to leave the report configuration tool.

## User Role Assignment Table

	IT Admin	Clinical Admin	Schedule Procedure	Patient Hookup	Prepare Report
<b>Main Screen</b>					
Schedule / Orders	No	Yes	Yes	No	No
Start a Resting Exam	No	No	No	Yes	No
Exam Search	No	Yes	No	No	Yes
User Preferences	Yes - No Status Filter	Yes - No Status Filter	Yes - No Status Filter	Yes - Filter Acquired only	Yes - Filter Acquired and Edited only
System Configuration	Yes - No Modality Settings, CFD or Report Settings	Yes - Audit Trail, Service Logs, Report Settings, Modality Settings and CFD	Yes - Service Logs only	Yes - Service Logs only	Yes - Service Logs only
<b>Exam Search</b>					
Edit	No	No	No	No	Yes - Acquired and Edited Exams only
Report	No	No	No	No	No
Copy Offline	No	Yes	No	No	No
Open Offline	No	No	No	No	Yes
Export	No	No	No	No	No
Reconcile	No	Yes (Signed only)	No	No	No
Archive	No	Yes	No	No	No
Delete	No	Yes	No	No	No
<b>Editing Permissions</b>					
Summary Tables	No	No	No	No	Yes
Conclusions Section	No	No	No	No	Diagnosis, Reason For End and Technician
Patient Data	No	No	No	Patient and Contact Fields - only after Acquisition	Admission ID, Indications, Referring Physician, Procedure type, Location, Notes, and Technician
Page Review	No	No	No	No	Yes - View/Add/Edit Events and Print
Update Exam State	No	No	No	Acquired only	Edited only
	<b>Review and Edit Report</b>	<b>Sign Report</b>	<b>Edit Conclusions</b>	<b>Export Report</b>	<b>View Exams/Reports</b>

Main Screen					
Schedule / Orders	No	No	No	No	No
Start a Resting Exam	No	No	No	No	No
Exam Search	Yes	Yes	Yes	Yes	Yes
User Preferences	Yes	Yes	Yes - Filter Acquired and Edited only	Yes - No Status Filter	Yes - No Status Filter
System Configuration	Yes - Service Logs only	Yes - Service Logs only	Yes - Service Logs only	Yes - Service Logs only	Yes - Service Logs only
Exam Search					
Edit	Yes - Acquired, Edited, Reviewed Exams only	Yes	Yes - Acquired and Edited Exams only	No	Yes
Report	No	No	No	No	Yes - Reviewed and Signed Exams only
Copy Offline	No	No	No	No	No
Open Offline	Yes	Yes	Yes	No	Yes
Export	No	No	No	Yes - Reviewed and Signed Exams only	No
Reconcile	Yes (Not Signed)	Yes (Not Signed)	No	No	No
Archive	No	No	No	No	No
Delete	No	No	No	No	No
Editing Permissions					
Summary Tables	No	No	No	No	No
Conclusions Section	Symptoms and Conclusions	Symptoms and Conclusions	Symptoms and Conclusions	No	No
Patient Data	No	No	No	No	No
Page Review	Yes - View and Print only	View and Print only	Yes - View and Print only	No	Yes - View and Print only
Update Exam State	Reviewed only	Signed only	Edited only	No	No - Screen is not shown