

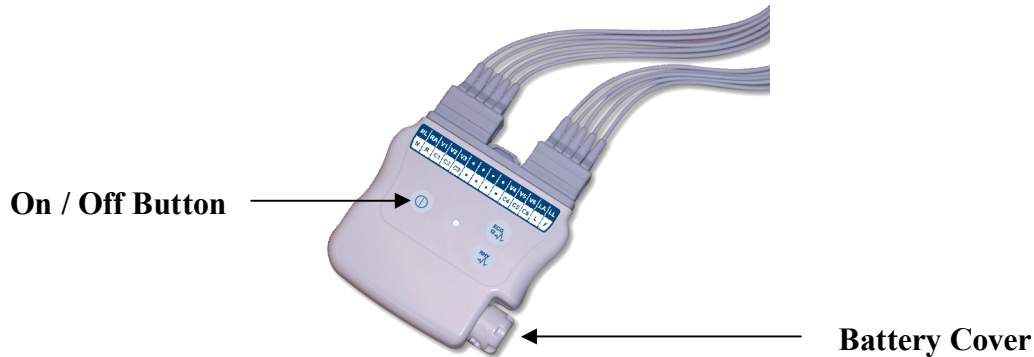
## Opening Battery Cover

The bottom cover seals the battery compartment, makes contact with the battery to power up the device, and locks in place. Removal of the battery cover will automatically turn the power off.

**NOTE:** The device On/Off button can also be used to power off the device.

To remove the battery cover, twist the cover in a counterclockwise direction.

**Figure 2-1**



## Battery Installation

The battery compartment is accessible on the bottom side area of the WAM.

Insert one AA battery into the battery compartment. Align the positive (+) and negative (-) indicators of the battery with the designators shown on the device's back label.

## Attaching the Patient Lead Wires

The patient lead wires consist of two connector blocks with 5 lead wires in each block. The lead wires are positioned on the cable to follow the contour of the torso. Each lead wire terminates in a Medi-clip or 4 mm Banana connector.

Securely insert the connector block into the ECG input connector on the top of the WAM.

**NOTE:** Be careful to insert the connector block into the appropriate input connector.

## Turning the WAM On

The WAM will power up as soon as a battery has been inserted into the battery compartment and the cover applied. If the WAM was turned off after its last use, the user can power the WAM on by pressing the On /Off button on the front side of the cable yoke:

## Turning the WAM Off

The user has two options to power the WAM off:

1. Remove the battery cover, or
2. Press the On/Off button
  - a. The LED display will turn off
  - b. An audible tone will sound indicating power off and RF disconnect

## Connecting the WAM to the ELI 350 (Pairing Mode)

**To pair the unit with the ELI 350:**

- 1. Enter WAM pairing mode on the ELI 350.**
- 2. Bring the WAM very close to the ELI 350.**
- 3. Ensure the unit is off**
- 4. Enter pairing mode on the WAM by holding the ECG 12 Lead and Rhythm buttons simultaneously and pressing the On/Off button.**
- 5. Wait a few seconds,**
- 6. If the WAM beeps three times it is permanently paired with the ELI 350 in pairing mode. Pairing will be retained until this process is repeated.**
- 7. If three beeps are not heard and the green and yellow LEDs are toggling intermittently, pairing has failed. Please try steps 1-6 again.**

## Patient ECG Hookup

### Skin Preparation

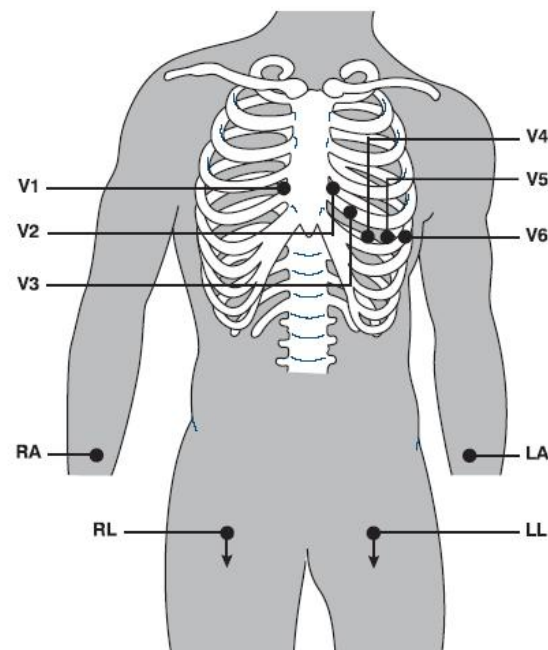
Skin preparation is important to perform before electrode attachment to help ensure good signal quality when transmitting patient data. Poor skin-electrode contact may cause noise or artifact which can affect the analysis of the ECG data. Low amplitude signals may also be the result of poor skin-electrode contact.

### To prepare the skin

1. Identify the electrode sites on the torso by referring to *Positioning the Electrodes*.
2. Remove any hair from the electrode sites using a razor.
3. Wipe oils from the electrode sites with an alcohol prep pad.
4. Remove any dead skin from the electrode sites with an abrasive pad. Two to three moderate rubs at each site should be sufficient.

### Positioning the Electrodes for 10-wire (12-lead) Hookup

| Limb Electrodes |     | Placement  |
|-----------------|-----|--|
| AAMI            | IEC |  |
| RA              | R   | Right arm lead should be placed on the right deltoid, forearm, or wrist. |
| LA              | L   | Left arm lead should be placed on the left deltoid, forearm, or wrist.   |
| RL              | N   | Right leg lead should be placed on the right thigh or ankle.             |
| LL              | F   | Left leg should be placed on the left thigh or ankle.                    |



| Precordial Electrode |     | Placement   |
|----------------------|-----|---|
| AAMI                 | IEC |   |
| V1                   | C1  | Fourth intercostal space at the right sternal border        |
| V2                   | C2  | Fourth intercostal space at the left sternal border         |
| V3                   | C3  | Midway between V2 and V4                                    |
| V4                   | C4  | Fifth intercostal space at the left midclavicular line      |
| V5                   | C5  | Anterior axillary line on the same horizontal level as V4   |
| V6                   | C6  | Mid-axillary line on the same horizontal level as V4 and V5 |

## LED Display Battery Voltage Indicator

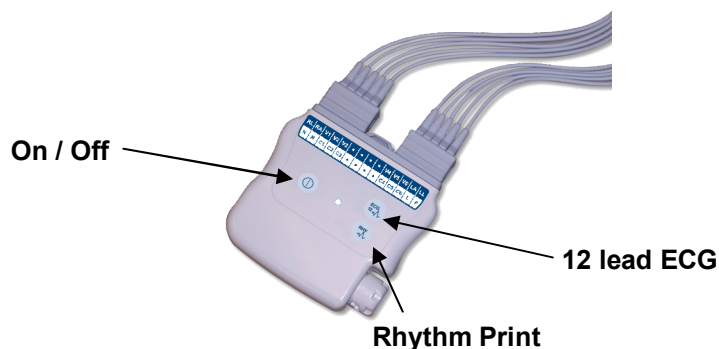
The WAM is powered with a single AA battery.

When the battery contains sufficient voltage and the patient is connected, the LEDs on the front of the WAM will display a solid Green LED representing the current battery voltage is sufficient to operate and communicate with ELI 350. If a battery with low voltage is inserted and the LED does not illuminate, or a Yellow LED is present a new battery must be installed. Please review table on following page to assure indicator messages are understood.

## Using the Buttons

Three buttons located on the front of the WAM are available for powering the WAM On/Off, acquire a 12 lead ECG, and for acquire a rhythm strip:

**Figure 2-4**



## Start Up

On initial start up, the green and yellow LEDs on the WAM will briefly turn and the unit will beep. The WAM indicates the following information through the LED:

- Solid Green: appropriate battery power level, good electrode-to-skin impedance, and good bidirectional communication with the electrocardiograph.
- Flashing Green: Low battery
- Solid Yellow: Lead Fail
- Flashing Yellow: Low battery and lead fail
- LED Off: unit not powered on, very low battery (no sound), or device out of range (WAM will beep intermittently).

*Note: See LED Indicators page for further information*

## Lead Check

LEAD CHECK is a valuable tool for verifying and optimizing signal quality. This is done automatically through visual communication with two LEDs located on the front of the WAM. These two LEDs are green and yellow in color and may be seen as a solid color, flashing on and off, or alternating between green and yellow.

*Note: A solid Green LED represents the impedance measured at the right arm (RA), left arm (LA), left leg (LL), and V1 through V6 electrodes is adequate for ECG acquisition. A yellow LED indicates a lead fail condition is present. See the cardiograph for more information.*

**LED Indicators**

| WAM Status                              | LED   | + Audio   | MODE  |
|---|---|---|---|
| Unpaired with Device or<br>OUT OF RANGE | GREEN OFF<br>YELLOW OFF   | Audio tick at 2Hz,<br>Starting 2 sec after unit<br>is turned ON.  | If the unit is unpaired<br>(meaning does not have<br>a host assigned) the<br>status is permanent<br>until pairing occurs.<br>If paired but OUT OF<br>RANGE the GREEN and<br>YELLOW LED are OFF,<br>the audio is ON but if<br>the unit goes back in<br>range, audio will stop<br>and GREEN or YELLOW<br>led will resume status as<br>normal. |
| Lead Fault                              | YELLOW solid (unless<br>Low battery )<br>GREEN OFF                  |   | One or more leads is<br>not connected properly.   |
| ALL OK                                  | GREEN ON solid<br>YELLOW OFF  |   | No lead fail condition is<br>detected, Battery is OK.   |
| Collecting 10 seconds of<br>data.....   | GREEN ON solid<br>YELLOW OFF  | Audio at 2 Hz until 10<br>seconds of data are<br>acquired and the<br>electrodes can be<br>disconnected. | The WAM is collecting a<br>10 second ECG.   |
| Low Battery                             | Blinking LED (Yellow or<br>Green depending on<br>lead fault status) |   | The WAM has detected<br>a low battery condition<br>please replace the<br>battery within 15<br>minutes.  |
| Very Low Battery                        | GREEN OFF<br>YELLOW OFF   | ¼ sec audio on, then<br>units turns off   | The WAM has detected<br>the very low battery<br>status and will turn OFF.   |

## Starting an ECG Acquisition Session

1. Ensure an AA battery is in the battery compartment (see note below).
2. Press On/Off button to turn the WAM on.
3. Connect the patient to the lead wires of the WAM.
4. Use LED LEAD CHECK to check the electrode-to skin impedances and verify patient hookup quality as explained in this section.
5. Use LED to assure communication has been established with the electrocardiograph and signal quality of each ECG is transmitted as expected.
6. ECG data should be automatically transmitted to the ELI 350
7. Press the 12 Lead ECG button to complete the acquisition of the 12 lead ECG.
8. Press the Rhythm button to acquire a rhythm print followed by pressing the Rhythm button again to stop the rhythm printing.

*NOTE: if battery voltage is too low, the WAM may not power on. Insert a new AA battery into the unit to continue operation.*

*NOTE: During normal operation, the Green LED will continuously display on the front of the WAM.*

*NOTE: If the battery cover is open during transmission, the WAM will stop transmitting. The cover must be applied and the battery must be reinserted to resume operation.*

*NOTE: If a lead fail condition occurs during operation, the yellow LED will turn on indicating lead fail in the center of the WAM yoke.*

## Ending an ECG Acquisition Session

At the end of the ECG acquisition session, the WAM should be turned off.

*Note: ECG data may now be reviewed, plotted, or edited as needed on the ELI 350.*