## Bid Specifications

## LIFEPAK® 12 Defibrillator/Monitor with ADAPTIV™ Biphasic technology

**The following specifications are for a portable, AC battery powered multi-parameter defibrillator/monitor. All specifications are 20° C unless otherwise specified.**

### 1. Defibrillator [Biphasic Waveform]

1.1. The device uses a biphasic truncated exponential waveform with the following characteristics:
- 1.1.1. voltage compensation for patient impedance
- 1.1.2. variable duration based on patient impedance
- 1.1.3. escalating energy levels up to 360J

1.2. The device has the following energy accuracy:
- 1.2.1. ±1 joule or ±5%, whichever is greater, of 50 ohms value into 25 to 200 ohms (applies when disposable therapy electrodes are attached)
- 1.2.2. ±1 joule or 10% of setting, whichever is greater, into 50 ohms

1.3. The device offers the following paddle options:
- 1.3.1. QUIK-COMBO® pacing/defibrillation/ECG electrodes with EDGE System™ technology; Adult and Pediatric.
- 1.3.2. FAST-PATCH® disposable defibrillation/ECG electrodes.
- 1.3.3. Standard Hard Paddles.
- 1.3.4. Internal Sterilizable Paddle Handles with Discharge Control.
- 1.3.5. External Sterilizable Paddles.
- 1.3.6. Pediatric Paddle attachments with a surface area of 15.4 $cm^2$. Slips onto Standard Adult Hard Paddles.

1.4. The therapy cable has a length of 2.4m (8 ft), not including electrode assembly.

1.5. While in manual mode, the device allows the operator to select the following energy settings (BTE); 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 30, 50, 70, 100, 125, 150, 175, 200, 225, 250, 275, 300, 325 and 360 joules or a user configurable sequence of 100-200 (1st shock), 100-300 (2nd shock), 100-360 joules (3rd shock).

1.6. The charge time to 360 joules does not typically exceed 10 seconds.

1.7. During synchronous cardioversion, the device begins energy transfer within 60ms of the QRS peak.

1.8. During advisory mode, when a shockable ECG rhythm is detected, the device is ready to shock within 20 seconds if the initial rhythm finding is "Shock Advised"; fully charged battery installed.

1.9. The device allows the operator to configure the output energy delivery sequence of three sequential shock levels ranging from 200, 200 to 300 and 200 to 360 joules.

## 2. Operating Modes

2.1. Advisory Mode (SAS); the device functions as an automated external defibrillator (AED), allowing BLS users to respond to cardiac emergencies.

2.2. Manual Mode; the device provides normal operating capability for Advanced Life Support (ALS) users, including manual defibrillation, synchronous cardioversion, and external pacing.

2.3. Setup Mode; the device allows the operator to configure the operating parameters of the device.

2.4. Service Mode; the device allows the operator to execute device diagnostic tests and calibrations.

2.5. Inservice Mode; the device simulates waveforms and trend graphs for demonstration and training purposes.

## 3. Automatic External Defibrillation (AED)

3.1. The device is capable of being configured to power on in the AED mode.

3.2. The device offers a system to automatically monitor the patient ECG for a potentially shockable rhythm.

3.3. The device has two CPR count down timers.

## 4. Power

Battery Options; the device is capable of operating from a variety of battery chemistries - NiCd batteries (FASTPAK® battery, FASTPAK 2 battery, LIFEPAK® NiCd battery) or SLA (LIFEPAK® SLA battery).

4.1. The device can store two batteries, operate from only one battery at a time, monitor the state of each battery and automatically switch when a low battery is detected.

4.2. The device is capable of operating from optional external AC Power Adapter.

4.3. The batteries in the device charge while the device operates from the Power Adapter.

4.4. Operating Time; two new fully charges batteries will provide the following prior to shutdown;

4.4.1. Monitoring (minutes)

a. NiCd - 110 typical, 60 minimum (FASTPAK, FASTPAK 2); 155 typical, 85 minimum (LIFEPAK NiCd)

b. SLA - 180 typical, 100 minimum. (LIFEPAK SLA)

c. Low Battery: NiCd - 10 typical, 2 minimum (FASTPAK, FASTPAK2); 14 typical, 2 minimum (LIFEPAK NiCd); SLA - 16 typical, 2 minimum (LIFEPAK 12 SLA)

4.4.2. Defibrillation (360 joule discharges)

a. NiCd - 80 typical, 45 minimum (FASTPAK or FASTPAK2); 110 typical, 60 minimum

b. SLA - 145 typical, 85 minimum. (LIFEPAK SLA)

c. After Low Battery; NiCd - 7 typical, 3 minimum (FASTPAK, FASTPAK 2); 10 typical, 3 minimum (LIFEPAK NiCd); SLA - 12 typical, 3 minimum. (LIFEPAK SLA)

4.4.3. Monitoring plus pacing (minutes at 100mA, 60 ppm)

a. Total: NiCd - 105 typical, 60 minimum (FASTPAK, FASTPAK2); 145 typical, 85 minimum (LIFEPAK NiCd)

b. SLA - 170 typical, 100 minimum (LIFEPAK SLA)

c. After Low Battery; NiCd - 9 typical, 2 minimum (FASTPAK, FASTPAK2); 12 typical, 2 minimum (LIFEPAK NiCd); SLA - 14 typical, 2 minimum (LIFEPAK SLA).

4.5. The device displays battery icons at the top of display area for each battery placed in the device. The battery icons indicate the state of battery charge (LIFEPAK NiCd Only). The battery icons indicate which of the two batteries is being used to supply power to the device. Low battery status is indicated with a low battery icon, flashing battery icon and a low battery message warning message. When a low battery is indicated, the device autoswitches to the second battery.

4.6. When both batteries reach a low battery condition, the device will emit an audible voice prompt to the operator to replace the battery.

4.7. The device retains the operator parameter settings with an inadvertent power loss of less than 30 seconds.

4.8. The device displays a service indicator when an internal self test failed.

## 5. Physical Characteristics

5.1. The device does not exceed the following weight limits;

5.1.1. Basic defibrillator/monitor with therapy cable: 6.6kg (14.5 lbs), without batteries.

5.1.2. NiCd Battery: FASTPAK Battery, FASTPAK 2 Battery 0.6kg (1.3 lbs). LIFEPAK NiCd Battery: 0.8 kg (1.7lbs), LIFEPAK SLA Battery: 1.3kg (2.8 lbs)

5.1.3. Standard paddles 0.9kg (1.9 lbs).

5.2. The device does not exceed the following height: 31.7cm (12.5 in).

5.3. The device does not exceed the width: 39.6cm (15.6 in).

5.4. The device does not exceed the following depth: 23.1cm (9.1in).

5.5. The device design incorporates two bedrail hooks to allow the device to hang from a stretcher while allowing the operator to monitor and treat the patient.

## 6. Display

6.1. The device has an active viewing area of not less than 140.8mm (5.5 in) wide by 105.6mm (4.2 in) high (LCD display) or not less than 165.1mm (6.5 in) wide by 123.8mm (4.9 in) high (EL display).

6.2. The device display is monochrome with a resolution of 640 x 480 pixels.

6.3. The device has 2 display choices; LCD and EL.

6.4. The device has user selectable LCD contrast.

6.5. The device displays a minimum of 4 seconds of patient ECG and alphanumeric characters for patient parameter values, device instructions, and prompts.

6.6. The device provides the option to display one or two additional waveforms.

6.7. The device can be configurable for display of three simultaneous waveforms channels.

6.8. The device includes a 'home screen' key which when depressed, returns the display to normal patient monitoring mode.

6.9. The display includes a user selectable maintenance prompt to alert the operator to initiate device maintenance by qualified service personnel

## 7. Data Management

7.1. The device captures and stores patient data, events (including waveforms and annotations), user test results, continuous ECG waveform records and diagnostic 12-lead reports in internal memory.

7.2. The device allows the operator to enter the following patient information;

7.2.1. Last Name
7.2.2. First Name
7.2.3. Incident ID
7.2.4. Patient ID
7.2.5. Age
7.2.6. Sex

7.3. The device allows stored reports to be retrieved for transmitting to a remote location. Transmitted reports must be received by one of the following:

7.3.1. Fax - A Group III, Class 2 or 2.0 fax host

7.3.2. Data – LIFENET RS receiving station and CODE-STAT™ data management system installed.

7.4. The device provides means to manage archived patient records. Options to manage archived records include:

7.4.1. Transmit archived patient records
7.4.2. Print archived patient records
7.4.3. Delete archived patient records
7.4.4. Edit archived patient records

7.5. The memory capacity of the device will typically be at least; 100 single waveform events for each of two patients and 45 minutes of continuous ECG for each of two patients.

7.6. The device allows the operator to store the following report options;

7.6.1. Short, medium, or long CODE SUMMARY™ critical event record
7.6.2. Initial ECG (except short format)
7.6.3. Auto vital sign measurements every five minutes and when predetermined alarm limits are exceeded
7.6.4. 3-channel or 4-channel 12-lead ECG report
7.6.5. Continuous waveform - 45 minutes continuous ECG record
7.6.6. Trend summary (includes patient information, vital signs data and vital signs graphs).
7.6.7. Vital Signs summary – includes patient information, event and vital signs log.
7.6.8. Snapshot – includes patient information and 8 seconds of transmitted ECG captured at the time of transmission.

## 8. Communications

8.1. The device is capable of configuring up to 19 data transmission sites and 19 fax transmission sites.

8.2. The device is capable of transferring data records by the following means;

8.2.1. internal PC card cellular modem for transmission to a remote PC
8.2.2. internal PC card modem for landline transmission to a remote PC
8.2.3. direct connect for data transfer to a PC with Medtronic software installed
8.2.4. external cellular modem connected to the device
8.2.5. external modem for landline transmission to a remote PC.
8.2.6. Bluetooth® wireless data transfer to cell phone then to a LIFENET® RS Receiving Station

8.3. The device supports EIA/TIA-602 compatible modems using Xon/Xoff or RTS/CTS flow control at 9,600 to 38,400 bps.

8.4. The device supports EIA/TIA-RS232E compatible data transfer at 9,600, 19,200, 38,400 and 57,600 bps.

8.5. The device supports Group III, Class 2 or 2.0 facsimile.

## 9. Fax Transmission

9.1. The device is capable of transmitting a 12-lead report or a snapshot report of a currently monitored patient or from a previously stored patient record to fax. Stored reports to be retrieved for transmitting to a remote location.

9.2. The device is capable of transmitting to fax in both, "normal" and "fine" resolutions.

9.3. The device provides status messages during transmission to fax

9.4. The device provides a transmission "abort" option to cancel fax transmission

9.5. The device provides "test" transmission function to a fax site to confirm correct set-up.

## 10. Monitor

10.1. ECG; The device monitors patient ECG via the following means;

10.1.1 3-wire cable for 3-lead ECG monitoring.

10.1.2 5-wire cable for 7-lead ECG monitoring

10.1.3 10-wire cable for 12-lead ECG monitoring

10.1.4 When the chest electrodes are removed, the 10-wire cable functions as a 4-wire cable

10.1.5 Adult Standard Hard Paddles and Pediatric Paddles

10.1.6 QUIK-COMBO pacing/defibrillation/ECG electrodes for paddles lead monitoring; adult and pediatric.

10.1.7 FAST-PATCH disposable defibrillation/ECG electrodes for paddles lead monitoring.

10.2. Lead selection; the device provides the following monitoring options;

10.2.1.Leads I, II, III with the 3-wire ECG cable.

10.2.2.Leads I, II, III, aVR, aVL, and aVF with the 4-wire ECG cable (simultaneous acquisition).

10.2.3.Leads I, II, III, aVR, aVL, aVF and C-lead with the 5-wire ECG cable (simultaneous acquisition).

10.2.4.Leads I, II, III, aVR, aVL, aVF, VI, V2, V3, V4, V5, and V6 with the 10-wire ECG cable (simultaneous acquisition).

10.3. The monitor allows the operator to adjust the ECG size using the following settings; 4, 3, 2.5, 2, 1.5, 1. 0.5, 0.25 cm/mV; (fixed at 1 cm/mV for 12-lead).

10.4. The monitor digitally displays patient heart rates from 20 to 300 bpm. Accuracy $\pm$ 4% or $\pm$ 3 bpm whichever is greater

10.5. The monitor displays "---"when the patient heart rate is out of range.

10.6. The monitor flashes a heart symbol for each patient QRS detected.

10.7. The monitor incorporates a continuous patient surveillance system, in advisory mode shock advisory is not active, will monitor the patient via paddles lead or lead II ECG for potentially shockable ECG rhythms, and advises the operator to PUSH ANALYZE if a shockable ECG rhythm is detected.

10.8. The monitor allows the operator to enable or disable voice prompts for selected warnings and alarms.

10.9. The device provides a continuous 1V/mV x 1.0 gain analog ECG output.

10.10. The device provides common mode rejection of at least 90dB at 50/60Hz.

## 11. Alarms

11.1. The device incorporates a Quick Set feature which activates default values for parameter and patient alarms.

11.2. The device incorporates a VF/VT alarm which activates continuous patient surveillance of potentially shockable ECG rhythms during manual mode operation.

11.3. The device incorporates an apnea alarm that activates after 30 seconds have elapsed since last detected respiration

## 12. Printer

12.1. The device prints a continuous strip of the displayed patient information.

12.2. The device includes a 50mm (2.0 in) or optional 100mm (3.9 in) thermal recorder.

12.3. The device prints at 25mm/Sec +/- 5% (measured in accordance with AAMI EC-11, 4.2.5.2)

12.4. The delay from display to printing is 8 seconds.

12.5. The device allows the operator to configure automatic printing of waveform events.

## 13. Frequency Response

13.1. The device offers the following frequency response settings;

13.1.1. Diagnostic: 0.05 to 150Hz. and 0.05 to 40Hz

13.1.2. Monitor: 0.67 to 40Hz. and 1.0 to 30Hz

13.1.3. Paddles: 2.5 to 30Hz.

13.1.4. Analog ECG Output: 0.67 to 32Hz (except 2.5 to 25Hz for Paddles ECG and 1.3 to 23 Hz for 1 to 30 Hz Monitor Frequency Response).

## 14. Pulse Oximetry ($SpO_2$)

14.1. The device incorporates pulse oximetry ($SpO_2$) monitoring using Masimo Set® technology compatible sensors.
14.2. The device measures, and displays $SpO_2$ in the range of 1 to 100%.
14.3. The device updates the $SpO_2$ displayed value (on average) every 4, 8, 12, or 16 seconds.
14.4. The saturation accuracy of the $SpO_2$ circuit is 70 to 100%.
14.5. The device measures, displays, and stores functional $SpO_2$ values.
14.6. The device displays pulse rates from 25 to 240 pulses per minute.
14.7. The $SpO_2$ display section of the monitor includes a dynamic signal strength bar graph.
14.8. The device emits a pulse tone at the onset of the pleth waveform.
14.9. The device can be configurable to turn $SpO_2$ tone to off.
14.10. The device can be capable of displaying an IR (pleth) waveform (*requires 100mm printer*).
14.11. The device has a pulse rate accuracy of +/-3 digits for no motion and +/-5 digits during motion.
14.12. $SpO_2$ waveform has autogain control.

## 15. 12-lead ECG

15.1. The device incorporates GE Marquette Medical Systems' 12SL™ ECG analysis program.
15.2. The device provides the option of printing the interpretation on the 12 lead ECG report.
15.3. The device provides the option of printing the 12-lead ECG report at 50mm/sec timebase.
15.4. The device provides the option of transmitting 12-lead reports to a fax machine or to a personal computer installed with CODE-STAT software.
15.5. The device provides the option of the reperfusion interpretive algorithm (*only outside of US*).

## 16. Pacer

16.1. The device operates in demand and non-demand modes.
16.2. The device allows the operator to set the default rate and current values.
16.3. The device generates pacing pulses at a rate of 40 to 170ppm.
16.4. The accuracy of the pacing output rate is within +/- 1.5% over the entire range.

16.5. The device generates a monophasic, truncated exponential current pulse (20 ±1.5ms).

16.6. The device allows the operator to select the pacing output current from 0 to 200mA.

16.7. The device incorporates a pacing pulse frequency which allows the operator to reduce the pacing rate by a factor of 4, to allow assessment of the patient's underlying ECG rhythm.

16.8. The pacing circuit includes automatic adjustment of the refractory period (function of rate) from 200 to 300ms +/- 3%, to ensure maintenance of the operator selected rate.

## 17. Noninvasive Blood Pressure (NIBP)

17.1. The device is capable of displaying blood pressure values in kPa or mmHg.

17.2. The device measures Systolic Pressure in range: 30 to 245 mmHg (4 to 32.7 kPa).

17.3. The device measures Diastolic Pressure in range: 12 to 210 mmHg (1.6 to 28 kPa).

17.4. The device measures Mean Arterial Pressure in range: 20 to 225 mmHg (2.7 to 30 kPa).

17.5. The device measures BP with accuracy: maximum mean error of ± 5 mmHg (± 0.7 kPa) with SD no greater than ± 8 mmHg (± 1.1 kPa).

17.6. The device performs a blood pressure measurement in 40 seconds, typical

17.7. The device measures Pulse rate in range: 30 to 200 PPM

17.8. The device measures pulse rate with accuracy ±2 PPM or ±2% whichever is greater

17.9. The device offers users a choice of initial cuff inflation pressures.

17.10. The device is capable of doing automatic recurring measurements at the following set intervals - 2, 3, 5, 10, 15, 30, 60 minutes.

17.11. The device allows automatic cuff deflation in case of excessive pressure (greater than 300 mmHg) or in case measurement time exceed 120 secs.

## 18. Capnography ($EtCO_2$ monitoring)

18.1. The device incorporates capnography using Microstream® technology.

18.2. The device does not have any $CO_2$ sensor external to the device.

18.3. The device is capable of displaying $CO_2$ value in kPa, Vol %, or mmHg.

18.4. The device does not use any external water traps.

18.5. The device is not sensitive to Non- $CO_2$ gases.

18.6. The capnography option is compatible with FilterLine® $CO_2$ accessories.

18.7. The device measures $CO_2$ pressure in range: 0 to 99 mmHg (0 to 13.2 kPa).

18.8. The device displays $CO_2$ waveform (requires 100mm printer).

18.9. The device measures $CO_2$ with the following accuracy:

**>20min of monitoring:** 0 to 38 mmHg (0 to 5.1kPa) ±2 mmHg; 39 to 99 mmHg (5.2 to 13.2 kPa): ±5% of reading or +0.08% for every 1 mmHg (0.13kPa).

18.10. The device measures respiration rate in range: 0 to 60 breaths/min.

18.11. The device respiration rate with the following accuracy:

**0 to 40 bpm:** ±1 bpm
**41 to 60 bpm:** ±2 bpm

18.12. The device has a typical warm up time of 30 seconds. The warm up time does not exceed 180 seconds.

18.13. The rise time of the $CO_2$ waveform is 190 msec.

18.14. The response time of $CO_2$ waveform including the delay time and rise time is 2.9 sec.

18.15. The device automatically compensates for ambient pressure changes.

## 19. Invasive Pressure (IP)

19.1. The device offers 2 channels of Invasive Pressure monitoring, with both waveforms and numerics displayed.

19.2. The device includes a measurement range of –30 to +300mmHg in six user selectable ranges.

19.3. The device is capable of displaying readings in kPa or mmHg.

19.4. The device offers user-selectable labels of ART, PA, CVP, ICP and LAP.

19.5. The device is compatible with strain-gauge resistive bridge transducers with a 5uV/V/mmHg sensitivity.

19.6. The device has a bandwidth of 0-30 Hz (<-3dB).

19.7. The device has a numeric accuracy of ±1mmHg or 2% of reading, whichever is greater, plus transducer error.

## 20. Trending

20.1. The device offers on-screen trending of choice of HR, $SpO_2$ (%), $EtCO_2$, $FiCO_2$, RR, NIBP, P1, P2, or STM measurement shown in channels 2 or 3.

20.2. The device includes a timescale of 30 minutes, 1, 2, 4 or 8 hours, or autoscale.

20.3. The device includes up to 8 hours of trend data with –06 Memory PCB.

20.4. The device includes trending of ST measurement after an initial 12-lead analysis.

## 21. Environmental

21.1. The device operates from 0° to 50°C (32° to 122°F).

21.2. The $SpO_2$ function operates from 5° to 45°C (41° to 113°F).

21.3. The non-operating temperature range of the device is -20° to +60°C (-4° to 140°F) except therapy electrodes and batteries.

21.4. The device operates in relative humidity from 5 to 95%, non-condensing.

21.5. The device operates from ambient to 429mmHg (0 to 15,000 ft).

21.6. The device is splash-proof (IPX4) per IEC 529 (with batteries and cables installed)

21.7. The device meets EMC: IEC 60601-1-2-2001/EN 60601-1-2-2001 medical equipment-general requirements for safety-collateral standard electromagnetic compatibility requirements and tests, IEC 60601-2-4:2002/EN 60601-2-4, clause 36, particular requirements for the safety of cardiac defibrillators and cardiac defibrillators/monitors.

21.8. The device operates normally after 5 drops on each side from 18 inches onto a steel surface.

21.9. The device passes vibration standard MIL-STD-810E Method 514.4 Propeller Aircraft - category 4 (figure 514.4-7 spectrum a), Helicopter - category 6 (3.75Grms), and Ground Mobile - category 8 (3.14Grms).

## 22. Configuration Settings

22.1. To prevent unauthorized access to the setup and service menus, the device requires separate 4 digit numeric security passcodes to be entered.

22.2. The device allows the operator to configure specific settings for the following software modules in the setup mode;

22.2.1. General: allows selection of the following;

a. language choice.

b. CODE SUMMARY Format.

c. site number.
d. device number.
e. automatic recording and storage of vital signs every 5 minutes.
f. adult or pediatric default.
g. line filter setting.
h. screen message timeout value.

22.2.2.Manual Mode: allows selection of the following;

a. synch after shock ON or OFF.
b. pads default energy setting (BTE) of 2, 5, 10, 50, 100, 200, 300 joules or auto energy sequence of 200/200/360 or 200/300/360 joules.
c. internal paddles default energy setting of 2, 5, 10, 20, 30 or 50 joules.
d. voice prompts ON or OFF in manual mode.
e. shock tone ON or OFF when full charge is reached.
f. manual access selection of DIRECT, CONFIRMED, PASSCODE, or RESTRICTED.
g. set passcode to enter manual access of:
    (i) NONE - default passcode enabled.
    (ii) NEW - user defined 4 digit passcode enabled.

22.2.3.Advisory Mode: allows selection of the following;

a. sequence of defibrillation energy settings (BTE) 200/200/360 or 200/300/360 joules.
b. voice prompts ON or OFF in advisory mode.
c. automatically analyzes after each shock ON or OFF.
d. motion alert ON or OFF.
e. CPR time interval of OFF, 15, 30, 45, 60, 90, 120, or 180 seconds or 30 minutes

22.2.4.Pacing: allows selection of the following;

a. default pacing rate of 40 to 170ppm.
b. default output current of 0 to 200mA.
c. default mode of DEMAND or NONDEMAND.

22.2.5.ECG: allows selection of the following;

a. default lead of LEAD II or PADDLES.
b. Continuous ECG waveform storage ON or OFF.

22.2.6.12-Lead: allows selection of the following;

a. auto transmit ON or OFF.
b. auto print upon acquisition ON or OFF.
c. interpretation printing ON or OFF.
d. ACUTE MI message printing ON or OFF.
e. Data acquisition PRE or POST (before or after button pressed).

f. Printing format in STANDARD or CABRERA format.

22.2.7.Events: allows selection of the following;

a. selection of events 2 through 9 from a preconfigured list.

b. selection of events 10 through 18 from a preconfigured list.

c. user customization of up to 16 events to be included in the list.

22.2.8.Alarms: allows selection of the following;

a. set volume for alarms, tones, and voice prompts.

b. enable or disable parameter alarms at power up.

c. VF/VT alarm enabled or disabled.

22.2.9.Printer: allows selection of the following;

a. auto print event selection:

(i) print defibrillation events ON or OFF

(ii) print pacing events ON or OFF

(iii) print CHECK PATIENT events ON or OFF

(iv) print SAS events ON or OFF

(v) print patient alarms ON or OFF

(vi) print operator annotated events ON or OFF

(vii) print initial rhythm ON or OFF

b. default ECG frequency response of:

(i) Monitor 0.5 - 40Hz

(ii) Diagnostic 0.05 - 150Hz

22.2.10.Transmission: allows selection of the following;

a. setup 19 data transmission sites and 19 fax transmission sites

(i) site name

(ii) site phone number

(iii) area code or other prefix

(iv) second prefix if needed

(v) output port for data transmission

(vi) test the connection to this site

(vii) clear this site from the list

b. select default destination site

c. setup output port configurations using one of the following;

(i) internal PC card cellular modem for transmission to a remote PC.

(ii) internal PC card cellular fax modem for transmission to a fax machine.

(iii) internal PC card modem for landline transmission to a remote PC.

(iv) internal PC card fax modem for landline transmission to a fax machine.
(v) direct connect for data transfer to a PC.
(vi) external cellular modem connected to the System Interface Connector.
(vii) external cellular fax modem connected to the System Interface Connector.
(viii) external modem for landline transmission to a remote PC.
(ix) external fax modem for landline transmission to a fax machine.
(x) Bluetooth wireless data transfer to cell phone to LIFENET RS receiving station

22.2.11. Clock: allows selection of the following;
- a. set the current date and time
- b. select real or elapsed time on the display.
- c. Daylight Savings Time ON or OFF.

22.2.12. Reset Defaults: allows selection of the following;
- a. reset all values to the factory default settings.

22.2.13. Print Defaults: allows selection of the following;
- a. printout the current device configuration setup.

22.2.14. Send Configuration: allows selection of the following;
- a. transfer the device setup configuration to another device.

22.2.15. Set Passcode: allows selection of the following;
- a. factory default PASSCODE can be changed to a user defined PASSCODE

22.2.16. Service Mode: allows selection of the following;
- a. Calibration
  - (i) Defib Calibration
  - (ii) Pacing Calibration
  - (iii) Printer Calibration
- b. Tests
  - (i) Buttons
  - (ii) Display Contrast
  - (iii) Display Pixels
  - (iv) Printer
  - (v) Voice/Tones
- c. Status
  - (i) Device Log
  - (ii) Error Log
  - (iii) Counters
  - (iv) Clear Memory
- d. Set Passcode

(i) factory default PASSCODE can be changed to a user defined PASSCODE

e. Maintenance Prompt

(i) set display prompt to complete device maintenance to:

(a) OFF
(b) 3 months
(c) 6 months
(d) 12 months

22.3. The device allows the entire list of configuration settings to be transferred to another identical device via a direct connect cable, thereby eliminating the need to program each device separately.

## 23. Data Management Architecture

23.1. When transferring data, the device will output data in a format compatible with hospital cardiology information systems such as the Marquette MUSE CV® cardiovascular information system.

23.2. The data transferred from the device will be LIFENET compatible.

## 24. Other

24.1. Device is designed to help meet HIPAA (Health Insurance Portability and Accountability Act of 1996) requirements.