ESCORT Vision™
Central Station
Operator's Manual

Model 20500

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

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TABLE OF CONTENTS

Preface

The ESCORT Vision Central Station is intended to be used to provide, using a wireless LAN for communication, centralized surveillance and documentation of patient vital sign data and arrhythmia/ST monitoring for a variable number of ESCORT II Bedside Monitors and a variable number of UHF telemetry transmitters in a hospital environment. It is intended for use by healthcare practitioners trained in the use of the equipment only.

The ST algorithm has been tested for accuracy of the ST segment measurement data. The significance of the ST segment changes must be determined by a physician.

The ESCORT Vision Central Station is intended only as an adjunct to patient assessment. It cannot replace skilled nursing care and proper surveillance. Be sure to carefully read this operator's manual, all directions for use of the Vision, ESCORT bedside monitors and monitor accessories, and all precautionary information before attempting clinical use of the Vision. Always keep high-risk patients under close surveillance.

This operator's manual contains the essential operating instructions and safety warnings for quick and easy operation of the ESCORT Vision Central Station. For complete information on the entire range of ESCORT Vision Central Station operations and features, refer to the *ESCORT Vision Central Station Reference Manual*. For complete information on servicing the central station, refer to the *ESCORT Vision Central Station Service Manual*.

The information in this document is subject to change without notice.

Warranty

The ESCORT Vision is warranted against defects in materials and workmanship for twelve (12) months from the date of shipment to the original purchaser. Accessories such as batteries, cables, cuffs, and sensors are warranted for ninety (90) days from date of shipment. Warranty is valid only to original buyer. Defective equipment should be returned freight prepaid to Medical Data Electronics. Equipment returned with defective parts and assemblies will be either repaired or replaced. This warranty is not applicable if repair has been attempted, if instrument has been damaged due to operation outside environmental and power specifications for product, or due to improper handling or use.

If any fault develops, notify MDE Technical Service giving full details of difficulty, and include model and serial number of device.

Technical Service

If you experience any problems with this product, call:

Technical Service	(818) 768-6411
MDE FAX	(818) 768-2899

Trademarks

Safety Considerations

The ESCORT Vision Central Station is intended for use by healthcare practitioners only. Observe these safety precautions, as well as those that appear within this manual.

WARNING: When operating ESCORT Vision Central Station and/or AutoNet™ components from an AC power source, wall receptacle must be a three-wire, grounded, hospital grade outlet. Use only the original hospital grade AC power plug and cord. An increased shock hazard may otherwise result.

WARNING: In order to avoid potentially lethal leakage currents do not plug unit into multiple outlet power strip.

WARNING: Explosion hazard. Do not use ESCORT Vision in presence of flammable anesthetics.

WARNING: Never remove ESCORT Vision enclosure panels because you may be exposed to dangerous high voltage. Always refer servicing to qualified personnel.

WARNING: Inappropriate settings for ECG size may adversely affect monitoring. Modify ECG sizing if necessary for reliable heart rate detection.

WARNING: Arrhythmia settings should be carefully checked for effective monitoring. Settings should only be modified by experienced, qualified healthcare professionals.

WARNING: Do not turn OFF parameter alarms. In the event of an adverse patient condition, audio alarm will not sound if it has been temporarily silenced or disabled.

WARNING: For pacemaker patients, HR detector may continue to count pacemaker artifact during cardiac arrest or some other arrhythmias. Keep pacemaker patients under close surveillance.

WARNING: When operating the Link Auxiliary Base (LAB) from an AC power source, wall receptacle must be a three-wire, grounded, hospital grade outlet. Use only either LAB's original hospital grade AC power plug and cord, or an equivalent hospital grade plug and cord to avoid risk of electrical shock.

WARNING: Connect LAB only to units listed to U. L. or I. E. C. standards in order to avoid potentially hazardous leakage currents. Do not under any circumstance use replacement parts and connect devices to LAB or Central Station that are not approved by Medical Data Electronics.

WARNING: Bedside audible alarms that have been turned off at central station will remain inoperative at bedside until they are manually re-enabled at bedside or central station. Use "ALARM SUSPEND" to temporarily suspend audible alarms.

WARNING: If network communication between a bedside and the central station is lost, central station will automatically retry to acquire that bedside's data. If central station is unable to reestablish communication, an audible technical alert tone sounds at central station and message **"LOST COMM"** is displayed in that bedside's display area on central station screen. The status LED on bedside transponder is extinguished to indicate loss of communication and a message on bedside test page indicates **"NO LINK TO CENTRAL"**. Refer to the **"Troubleshooting"** section of this manual for more information.

CAUTION: Do not use ESCORT Vision in environmental temperatures above 35º C or below 10º C to ensure proper operation and avoid equipment damage.

NOTE: The ESCORT Vision Central Station is intended only as an adjunct in patient assessment. It must be used in conjunction with clinical signs and symptoms.

NOTE: The system cannot replace skilled nursing care and proper surveillance. Keep high-risk patients under close surveillance.

NOTE: Position ESCORT Vision Central Station in a well-ventilated area with proper airflow and cooling to ensure proper operation.

NOTE: The ESCORT Vision emits radio frequency energy every 50 milliseconds. When patient monitoring cables from other instruments are placed in close proximity to the transmitting antenna, enough energy may be induced to produce an artifact on waveform monitors. During installation, check for artifact production on any nearby instruments. If any periodic artifact is observed, turn off the radio interface and contact MDE Technical Support.

NOTE: Use an uninterruptible power supply in line between ESCORT Vision Central Station base unit and AC power source to prevent loss of information in the event of a power outage or power surge.

NOTE: The ESCORT Vision Central Station and antenna system should be installed and serviced by qualified MDE Technical Support Personnel only.

NOTE: Read this Operator's manual carefully before attempting any clinical use of Escort Vision central station. Additional warnings, cautions and notes are found elsewhere in this manual.

About Your Vision Central Station

The ESCORT Vision Central Station provides communication, centralized surveillance and documentation of patient vital signs and arrhythmia monitoring for up to 16 patients.

CAUTION: Pressing ON/OFF switch or System Reset button will cause a complete loss of data in the Random Access Memory (RAM) of Vision Base. Stored patient history will be lost.

Turning the Vision On

1. Press Vision Base power switch to activate base.
2. Press Vision Display power switch to activate display.
3. Toggle power switch on Link Auxiliary Base to the 'I' position to activate.
4. Adjust Vision Display brightness and contrast controls for comfortable viewing.

Turning the Vision Off

You will usually not need to turn Vision off. However, under special circumstances such as scheduled power outages, field service, or when the need to move equipment arises, you may have to turn Vision off. MDE recommends only system maintenance personnel shut system down. However, if you need to turn system off, be sure to follow prescribed power-down sequence.

TO POWER SYSTEM DOWN:

1. Touch **SYS SETUP**.
2. Touch **SYSTEM OPTIONS**.
3. Touch **VISION POWER DOWN**.
4. Touch **YES** to proceed. When you see message **"It is now safe to turn off your computer"** turn front panel power switch off.

Admit a Patient

1. Touch **A/D/T**.
2. Touch display tile for device to be used.
3. Touch **ADMIT**.
4. Type patient's name.
5. To enter a patient's ID, touch **PATIENT ID** box; then type patient's ID.
6. To enter a patient's room/bed or temporary location, touch **LOCATION** box.
7. Touch **CHANGE ADMIT TIME** to adjust admit time if needed (you cannot adjust admit time prior to discharge time for last patient on this monitor).
8. IF ADMIT TIME NEEDS TO BE ADJUSTED, touch **SET CUSTOM ADMIT TIME**.
9. Move ≤ pointer on slide bar to select correct admit time.

Discharge a Patient

1. Touch **A/D/T**.
2. Touch display tile for patient to be discharged.
3. Touch **DISCHARGE**.
4. Touch **YES**. Allow data to clear from NAME/ID/LOCATION boxes.

Generate Recording

1. Touch **RECORD**.
2. Touch display tile for patient desired for this recording.

Recording Multiple Waveforms

1. Touch **RECORD**.
2. Touch **SELECT WAVES**.
3. Touch each of the specific waveforms desired for this recording (maximum of 3).

Generate Continuous Recordings

1. Touch and hold **RECORD** key until **RECORD** changes to **CONTINUOUS RECORD**.
2. Touch display tile for patient requiring continuous recording.

Cancel Recordings

1. Touch **RECORD**.
2. Touch **CANCEL RECORD** or **CANCEL ALL…**

Silence Alarm Tones

1. Touch **ALARM SUSPEND**.
2. Touch anywhere on display tile for patient in alarm.

NOTE: Patient(s) in alarm will have a flashing blue bar at top of their display area. Messages concerning patients' current alarm status will also be displayed in this patient header area.

Technical violations such as check leads and low battery will NOT include the blue bar and will have low tone every 4 seconds with a FLASHING yellow message in patient header. These tones are suspended in same manner as parameter violation.

Set Arrhythmia and Vital Sign Alarms

1. Touch **ARR/ALARM SETUP**.

2. Touch appropriate patient display tile.

3. Default tab is **ARRHYTHMIA** settings. Touch **BEDSIDE** tab to access vital sign alarms, **TELEMETRY** tab to access transmitter settings, and **ST** tab to access ST settings.

4. Touch alarm related setting (**Alarm, Level, Record, Save, Value**) you want to change for specific alarm events.

5. Touch **ARRHYTHMIA ON/OFF** to turn arrhythmia processing **ON** or **OFF** for that patient.

6. Touch **RELEARN** to cause arrhythmia algorithm to relearn a patient's normal rhythm.

7. Touch **STANDBY** to suspend arrhythmia processing for a specific patient for 3 minutes.

8. Touch **BEDSIDE ALARM TONES** to turn bedside monitor alarm tones **ON** or **OFF**.

NOTE: This setting does NOT affect central station alarm tones.

Adjust BEDSIDE Vital Sign Settings

1. Touch numeric display tile of ANY vital sign to be adjusted (for example, HR, NBP, RSP. etc.).

2. Adjust vital sign functions as desired. Access to common functions include:

   - Touch **HR** numeric tile for desired patient, then touch **ECG** tab to change ECG lead configuration, turn pacer detection ON or OFF, and adjust size of ECG waveform.

   - Touch **NBP** numeric tile for desired patient to access ability to START/STOP a cuff measurement and adjust desired automatic cuff measurement interval.

   - Touch **RSP** numeric tile for desired patient to adjust size of Respiration waveform.

Reviewing Stored Data

Full Disclosure

1. Touch **REVIEW**.

2. Touch tile for patient whose data you want to check. The Patient Information popup will open to **FULL DISCLOSURE** tab and will display beat-to-beat waveform information.

    - Use **PAGE** (arrow) keys to page forward or backward in time.

    - Touch **TIME** to open Time Select popup and select a specific time. Touch **EXIT** on Time Select popup to return to Full Disclosure display.

    - Touch **TRACE SELECT** to open Select Waveform popup and select desired waveforms.

    - When accessing Full Disclosure, display shows maximum amount of compressed waveform. Touch any portion of compressed waveform area, and a top panel appears and displays 10 seconds of uncompressed waveform data.

    - Touch **RECORD** to record selected 10-second waveforms.

    - Touch **PRINT STRIP** to print selected 10-second waveforms to laser printer.

    - To print all compressed waveform data, touch **PRINT** when only compressed waveform data appears in display. The Print Page Time Select popup appears and allows you to print all compressed waveform data, data for a specific timeframe, or data for current hour.

Event History

1. Touch **REVIEW**.

2. Touch tile for patient whose data you want to check. The Patient Information popup will open to **FULL DISCLOSURE** tab.

3. Touch **EVENT HISTORY**.

    - Touch **REVIEW BY CLASS** to review events by type of event. Touch event type desired for review in box on left. Chronological listing of those events appears in box on right.

    - Touch **STANDARD REVIEW** to review ALL events in chronological order.

    - Touch any event description to display that event in waveform display area.

- Touch **RECORD** to record a selected waveform event.
- Touch **PRINT STRIP** to print selected strip(s) on laser printer.
- Touch **DELETE EVENT** to delete a single event. Touch **DELETE ENTIRE CLASS** to delete all events saved for a specific class. Touch **DELETE ALL EVENTS** to delete all events.
- Touch **RESTORE DELETED EVENTS** if you inadvertently deleted one or more events.
- To review beat-to-beat Full Disclosure waveform data preceding or following any event, touch **FULL DISCLOSURE** tab while that event is displayed in event display box.

Tabular Trend

1. Touch **REVIEW**.
2. Touch tile for patient whose data you want to check. The Patient Information popup will open to **FULL DISCLOSURE** tab.
3. Touch **TABULAR TREND**.
   - Touch **INTERVAL** to change time interval between vital signs.
   - Use **PAGE** (arrow) keys to page forward or backward in time.
   - Touch **TIME** to open Time Select popup and select a specific time. Touch **EXIT** on Time Select popup to return to Tabular Trend display.
   - Touch **RECORD** to record vital sign data to recorder. The Record Page Time Select popup appears and allows you to record all vital sign data, data for a specific timeframe, or data for current hour.
   - Touch **PRINT** to print vital sign data to laser printer. The Print Page Time Select popup appears and allows you to print all vital sign data, data for a specific timeframe, or data for current hour.

Graphical Trend

1. Touch **REVIEW**.

2. Touch tile for patient you want to review data. The Patient Information popup will open to **FULL DISCLOSURE** tab.

3. Touch **GRAPHICAL TREND**.

   - Touch **DEFINE GRAPH** to select which parameters to graph, what the scale should be, and what selections the time span should be. Common preset graphs are also offered.

   - Touch **PRINT** to print graphic trend to laser printer.

Review Data for Discharged Patient

1. Touch **REVIEW**.

2. Touch **DISCHARGED PATIENTS** key at bottom right of display.

3. Select patient from Discharged Patient popup. Use same steps described in Full Disclosure, Event History, Tabular Trend, and Graphical Trend to review data.

Telemetry Transmitter (Guardian Transmitter)

NOTE: Refer to the **ESCORT Guardian Telemetry Transmitter Operator's Manual** (MDE part number E9030-30) for complete operating instructions on the Guardian Telemetry Transmitter.

NOTE: Refer to the **ESCORT Vision Central Station Reference Manual** (MDE part number E9030-34R) for complete operating instructions on Central Telemetry and the Guardian Telemetry Transmitter.

WARNING: Electromagnetic interference (EMI) may affect the performance of this device. Special care should be taken when electrosurgical instruments or similar devices are used on a patient wearing any telemetry transmitter.

1. Touch display area of desired patient monitored by a Guardian Transmitter.
2. Touch **TRANSMITTER** tab.
3. Touch **RECEIVER** to turn transmitter to OFF.

NOTE: Batteries must be removed from transmitter to allow RECEIVER to be turned OFF.

Telemetry Transmitter (Angel Transmitter)

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

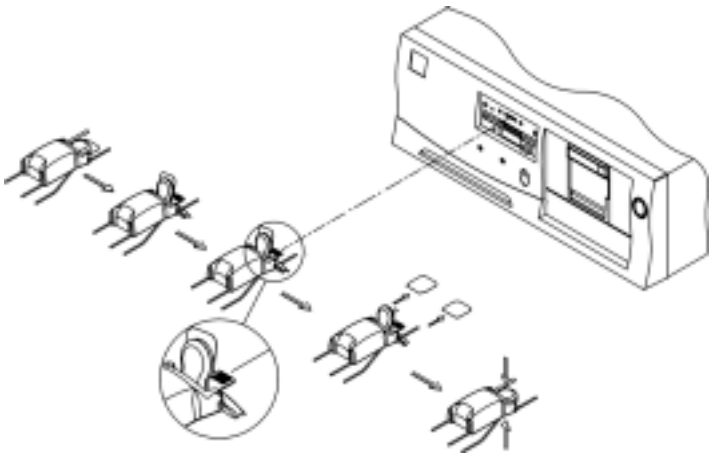
NOTE: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may may cause undesired operation.

NOTE: Refer to illustration at end of this section for instructions on 5-Lead operation, and for instructions on deactivating used transmitter.

Symbols

	**Attention:** Consult accompanying documents.
	**Type CF Defibrillation Protected Equipment**: Isolated patient connections comply with allowable leakage current limits for direct cardiac application and are protected against effects of defibrillation.
IPX7	Water tight
	TBD
	Single Patient use only
	Certification – UL 2601

Instructions for Programming the Angel Transmitter



1. While still in package, expose transmitting head of transmitter.
2. Fold back both sides of foam programming head to expose programming tab. Do not remove release liners.
3. Insert tab into programming port on front of Vision base (see Illustration). **Once transmitter is inserted in programming port, system will automatically provide instructions for finding correct screen programming.**
4. Follow on screen programming instructions.
5. After transmitter is programmed, remove from programming port.
6. Write patient ID onto device in the space provided.

NOTE: To maximize battery life, DO NOT perform Steps 7 and 8 until you are ready to begin patient monitoring.

7. While still in package, remove release liners on both halves of programming head.
8. Close and press the foam programming head together to activate transmitter.
9. Remove transmitter from package, apply to patient.

WARNING: Once programming of the transmitter is complete, the patient's ID MUST be written on the transmitter to ensure the vital signs correlate to that particular patient.

What to do if you encounter these Messages:

Message #1

TRANSMITTER ADMIT: ENTER PATIENT INFORMATION

a. Using on-screen keyboard, enter **PATIENT NAME, PATIENT ID**, and **LOCATION**.

b. Touch **EXIT** to begin programming operation. **ADMITTING PATIENT…**is displayed at top of on-screen keyboard.

c. After programming completes successfully, the following message is displayed:

TRANSMITTER READY – WRITE <Name> AND <Channel> ON TRANSMITTER

Touch **OK**, remove transmitter from Vision base, write patient name and channel number on transmitter.

Message #2

PATIENT CURRENTLY ADMITTED – CONFIRM ASSIGNING TRANSMITTER TO <Patient> ON CHANNEL <Channel>

a. Touch **YES** if this is desired patient **(touching NO will allow you to discharge patient and admit new patient as described in Message #1)**.

b. After programming completes successfully, the following message is displayed:

TRANSMITTER READY – WRITE <Name> AND <Channel> ON TRANSMITTER

Touch **OK**, remove transmitter from Vision base, write patient name and channel number on transmitter and go to.

Message #3

PATIENT CURRENTLY ADMITTED – REPLACE TRANSMITTER ON PATIENT <Name> CHANNEL <Current Channel>?

a. Touch **YES** to replace transmitter.

b. After programming completes successfully, the following message is displayed:

TRANSMITTER READY – WRITE <Name> AND <New Channel> ON TRANSMITTER

Touch **OK**, the following message is displayed:

DEACTIVATE OLD TRANSMITTER PRIOR TO ACTIVATING NEW TRANSMITTER

c. Touch **OK**, remove new transmitter from Vision base, write patient name and channel number on transmitter, and ***deactivate the old transmitter***.

Message #4

WARNING! – ACTIVE TRANSMITTER ON PATIENT <Name> CHANNEL <Channel> – CONTINUE?

a. Touch **YES** if you wish to replace transmitter (or touch **NO** to cancel).

b. After programming completes successfully, the following message is displayed:

TRANSMITTER READY – WRITE <Name> AND <New Channel> ON TRANSMITTER

Touch **OK**, the following message is displayed:

DEACTIVATE OLD TRANSMITTER PRIOR TO ACTIVATING NEW TRANSMITTER

c. Touch **OK**, remove new transmitter from Vision base, write patient name and channel number on transmitter, and ***deactivate the old transmitter***.

Message #5

ACTIVE TRANSMITTER ON CHANNEL <Channel> – DEACTIVATE OLD TRANSMITTER – CAN NOT ASSIGN

a. Touch **OK**, remove new transmitter from Vision base and ***deactivate old transmitter***.

b. Start again from **Step 3** in the previous section ***Instructions for Programming the Angel Transmitter***.

Message #6

If tile selected does not contain an admitted patient, but has a good signal, and has a Low Battery indication, on-screen keyboard displays and says:

TRANSMITTER ADMIT: ENTER PATIENT INFORMATION

a. Using on-screen keyboard, enter **PATIENT NAME, PATIENT ID**, and **LOCATION**.

b. Touch **EXIT** to begin programming operation. **ADMITTING PATIENT…**is displayed at top of on-screen keyboard.

c. After programming completes successfully, the following message is displayed:

TRANSMITTER READY – WRITE <Name> AND <Channel> ON TRANSMITTER

Touch **OK**, the following message is displayed:

DEACTIVATE OLD TRANSMITTER PRIOR TO ACTIVATING NEW TRANSMITTER

d. Touch **OK**, remove new transmitter from Vision base, write patient name and channel number on transmitter, and ***deactivate the old transmitter***.

Patient Preparation

Proper skin prep and electrode placement is critical to ensure patient safety and accurate readings. Follow steps below carefully:

1. Shave areas where electrodes will be applied.

2. Place lanyard over patient's head and adjust lanyard length accordingly.

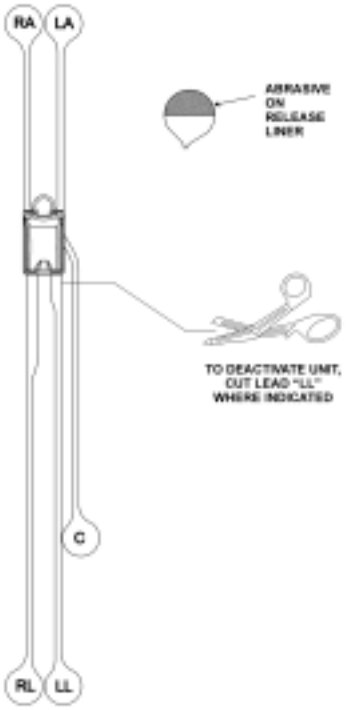
3. For adult patients, rub electrode location briskly with abrasive on release liner (see illustration below) until skin is pink. Do not use alcohol to prep the skin.

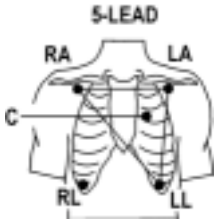
4. Apply electrodes to skin, pressing firmly around entire edge of adhesive surface.

5. Remove electrodes from patient when battery is depleted or monitoring not required.

6. Cut lead “LL” where indicated to deactivate transmitter (see illustration below).

7. Return transmitter to manufacturer for proper disposal and reprocessing.





Change Display Format

1. Touch **SCREEN SETUP**.

2. Touch π or θ (zipper arrows) on right side of patient's tile to expand or close displayed data. It may be necessary to open/close other tiles to allow patient's tile to be expanded sufficiently.

3. To change display format for any patient, touch **FORMAT PATIENT** and select patient.

4. Select from either factory or previously entered custom display formats. To access keys to allow you to edit any format, touch **EDIT**.

5. When finished, touch **EXIT**.

Recalibrate the Touchscreen Display

1. Touch **SYS SETUP**.

2. Touch **CALIBRATE SCREEN**.

3. Touch **YES**.

4. Touch the 3 bulls-eye targets as they appear on screen.

5. Touch several areas on screen to confirm pointer arrow jumps to your fingertip.

6. Touch **YES** if pointer is calibrated, or **NO** if you need to restart calibration process.

Display Problems

Problem	*May Be Caused By*	*Try This...*
No Display or Display Completely Blank.	Vision display is Off.	Turn Vision Display On.
	Vision Base is Off.	Turn Vision Base On.
	Brightness and/or Contrast controls may be out of adjustment.	Adjust Brightness and/or Contrast until you can see display.
	Display and/or Base connections may be loose.	Power down system, check all display connections. Restart system.

Central Station Does Not Boot Up

Problem	*May Be Caused By...*	*Try This...*
Central Station Does Not Boot Up.	Vision Display is Off.	Turn Vision Display On.
	Vision Base is Off.	Turn Vision Base On.
	Connections may be loose.	Power down system, check all display connections. Restart system.
	Hard disk drive may not be functioning.	Restart system. Confirm LED flicker activity on HDD indicator on Vision Base during booting process. If system still does not boot up, contact MDE technical support.
	System BIOS information may be corrupted or lost.	ROM BIOS may be corrupted. Write down error messages and contact MDE Technical Support.

Problem	*May Be Caused By...*	*Try This...*
	Vision Base System errors.	If internal system errors occur, some error text or coded information will be displayed. Write down any such messages and contact MDE technical support for assistance.

No Communication Message

Problem	*May Be Caused By...*	*Try This...*
"NO COMM" (No communication) message.	Link Auxiliary Base (LAB) is off.	Turn LAB on.
	Connections may be loose.	Power off system; check all system connections, paying particular attention to antenna. Restart system.
	ESCORT monitor is out of range or not powered up.	Confirm Escort monitor is in range and retry. Confirm link by accessing bedside Network Status page.
	ESCORT bedside is not assigned to central station frequency.	Confirm bedside monitor is configured to Central Station frequency channel in Configuration function.
	Central Station not recognizing bedside monitor.	Confirm central station is configured for monitor(s) in question. Check Power Levels page at Central Station to confirm communication or view bedsides.

Problem	*May Be Caused By...*	*Try This...*
	Bedside monitor's antenna and or transceiver are missing and/or loose.	Check connection to transceiver and antenna connection. Tighten or replace if necessary. Ensure transceiver's LED is "on". Check test page of monitor's network status on RF transponder's hex code.

Recorder Errors

Problem	*May Be Caused By...*	*Try This...*
No recording.	Recorder out of paper.	Remove old paper cylinder (if present), and install new roll of paper.
	Paper was installed backwards.	Remove paper roll and reinstall, noting proper orientation.
	Paper is jammed.	Verify paper is loaded and aligned correctly. If evidence of a jam exists, remove paper carefully; clean out all jammed paper and reinstall roll, paying particular attention to proper orientation.
	Door not closed properly.	Reopen and close recorder door.
	ALARM RECORD turned OFF on Hard Copy Setup.	Open Hard Copy Setup popup and make sure ALARM RECORD is turned "ON."

Problem	*May Be Caused By...*	*Try This...*
	ALARM RECORD device set to Printer instead of recorder.	Open Hard Copy Setup popup and make sure Recorder is selected for Alarm recording.
Certain events don't record.	ALARM RECORD is not set on Alarm/Arr popup.	Set ALARM RECORD to "ON" for event on Alarm/Arr popup.

Touchscreen Errors

Problem	*May Be Caused By*	*Try This...*
Touchscreen is not functioning or screen response is inaccurate.	Touchscreen out of calibration.	Reset central station and calibrate touchscreen when prompted during startup.
	Touchscreen cable is loose or disconnected.	Turn off all power to Base and Display. Make sure all connectors are snugly fastened. Turn power to Base and Display back on; calibrate touchscreen when prompted.

Arrhythmia Anomalies

Arrhythmia anomalies can occur for a variety of reasons. Often they are traced to problems with patient electrodes, lead wires, or cables. Always ensure patient ECG signal is as clean as possible.

Problem	***May Be Caused By***	***Try This...***
Anomalous event classifications.	Noisy ECG signal causing false event detection and classification due to attachment, motion, or electrical artifact.	Ensure ECG signal is clean by using good setup and lead placement techniques. If ECG is still noisy, check electrodes, lead wires, and patient cable for possible failure. Minimize any possible muscle motion, contact, or electrical artifact.
	Lead change or change in patient's rhythm has altered learned dominant beat.	Relearn current dominant rhythm at central station.
	T-waves and/or P-waves are being detected and classified.	Select a lead that maximizes R-wave and results in P-waves and T-waves no larger than 3 mm on recorder. Relearn ECG after making adjustments via central station.
	Atrial fibrillation or flutter are difficult rhythms. The frequent rate changes and distortion of QRS may result in miscalculation of beats and events.	Adjust limits to minimize false Run, Missed Beat, and SVTach classifications.

Extraordinary Event Detection

Problem	*May Be Caused By*	*Try This...*
Extraordinary Event Detection.	Some beats do not meet algorithms criteria for classified abnormal, even though a clinician may consider it abnormal.	No action required. All arrhythmia detection algorithms must make tradeoffs to minimize nuisance alarms. No algorithm has 100% sensitivity to all abnormal beats.
	All beats in observed event do not meet criteria for that type of event.	Adjust limits in Alarm Setup to be more sensitive to type of event.
	All beats in observed event were not detected. Beats less than 3 mm in amplitude will not be detected. Beats greater than 4 cm may trigger artifact rejection. Very wide beats may be missed due to their low frequency content.	Adjust size of QRS to about 1 to 2 cm on bedside monitor. If a very wide beat is consistently being missed, select a lead on which abnormal beat is not as wide.

Alarm, Save, Print, or Record Anomalies

Problem	*May Be Caused By*	*Try This...*
Alarm does not sound; central station does not save, or does not record.	Arrhythmia has not been turned "on" for patient.	Verify setup for patient. Ensure arrhythmia monitoring option is "on" and limits are set appropriately.
	Event limits are set to inappropriate values.	Verify setup for patient. Ensure proper settings are "on" and limits are set appropriately.
	Desired event settings are not turned "ON" on Alarm/Arr popup.	Verify setup for patient. Ensure proper settings are "ON" and limits are set appropriately.
	All beats in event did not meet algorithm's criteria for classifying the event.	Use Full Disclosure option to verify classification of beats in arrhythmia event.
Print Buttons do not appear on popup.	"Have Printer" is not selected on Configuration screen.	Access Configuration screen (this requires a password). Check the "Have Printer Box."

Miscellaneous Conditions

Problem	**May Be Caused By**	**Try This...**
No Start/Stop buttons appear on NBP popup.	"Allow Start/Stop on NBP" may not be selected on Configuration screen.	Access Configuration screen (requires password) and touch **Allow Start/Stop on NBP** to put a check in box.
Patient ID does not show in patient header when admitting a patient.	"Pat-ID in Patient Header" may be unchecked on Configuration screen.	Access Configuration screen (requires password) and touch **Pat-ID In Patient Header** to put a check in box.

WARNING: To avoid electric shock, unplug the AC power cord before cleaning

CAUTION: Do not immerse the instrument or its accessories in liquids. Do not use caustic or abrasive cleaners that will damage the housing.

Vision display, Vision base, and Link Auxiliary Base (LAB) should all be cleaned as required per hospital procedures. Follow these guidelines when cleaning Vision Central Station:

- Use only a lint free, nonabrasive cloth, which has been slightly dampened with mild detergent. A glass cleaner (non-ammonia) or a non-alcoholic based solvent is recommended. If you are unsure about cleaning solution, apply a small amount to cloth and test an area on side of base unit housing. If no damage is done to housing finish, proceed cautiously with rest of system.
- Avoid harsh cleaning solutions such as isopropyl alcohol or other solvents that might harm plastic surfaces.
- Do not immerse any components in liquid.
- Do not spray liquids directly onto Vision components.
- Do not allow any liquid to come into contact with power connector, fuse holder or switches.
- Do not allow liquids to penetrate connectors or ESCORT Vision chassis.
- Do not spray cleaners on touchscreen. Spray on cloth and not directly on touchscreen.
- The ESCORT Vision central station and Link Auxiliary Base (LAB) should be located in an area that allows ample air circulation. It should be away from possible sources of electrical/magnetic interference and extreme temperatures. An uninterruptible power supply (UPS) is recommended to prevent system from resetting during brief power outages or testing of hospital backup power systems.
- Visual inspection of mechanical integrity of all cables and power cords should be performed per hospital procedures.
- Biomedical inspection should be performed to check for acceptable equipment performance and electrical safety according to protocol set forth by your hospital's administration.
- Refer all corrective maintenance to qualified service personnel. Do not attempt to remove housing to correct a problem.
- All maintenance should be performed by qualified personnel only. Circuit diagrams, component part lists, and descriptions are available on request.

Shipping and Storage

See shipping carton for storage specifications and for transport specifications if you need to return unit to MDE for service or repair.