

Contents

1

The Basics 1-1

About This Manual 1-3

Manual Purpose 1-3

Intended Audience 1-3

Revision History 1-3

Manual Conventions 1-4

Product References 1-4

Definitions 1-4

Illustrations 1-5

Common Operations 1-6

“Clicking” the Mouse 1-6

Radio Buttons 1-6

Check Boxes 1-7

Scroll Bars 1-7

Popup Lists 1-8

Unit Defaults Worksheet 1-9

2

Equipment Overview 2-1

Introduction 2-3

ApexPro Telemetry System 2-4

ApexPro Transmitter 2-4

ApexPro Transmitter Keys and LEDs 2-5

ApexPro Transmitters and MCL Monitoring 2-7

Apex Oximeter SpO2 Module 2-7

Apex Oximeter Keys and LEDs 2-7

Accutrack DX Noninvasive Blood Pressure Monitor 2-8

Accutrack DX Buttons and Switches 2-9

Antenna System 2-10

Receiver Subsystem 2-10

Unity Network 2-10

Clinical Information Center 2-11

3

Safety 3-1

For Your Safety	3-3
Intended Use	3-3
Definitions	3-3
System Safety	3-3
Dangers	3-3
Warnings	3-4
Cautions	3-7
Notes	3-9
Reference Literature	3-10
Classification	3-10
Underwriters Laboratories, Inc.	3-10
Equipment Symbols	3-11

4

Connection 4-1

ApexPro Transmitter Setup	4-3
ApexPro Transmitter Battery Installation	4-3
Battery Functional Life	4-3
ApexPro Transmitter Leadwire Installation	4-4
Multi-Link Leadwire Sets	4-4
ApexPro Transmitter Leadwire Attachment	4-5
ApexPro Transmitter Leadwire Removal	4-5
Apex Oximeter Setup	4-6
Apex Oximeter Battery Installation	4-6
Battery Functional Life	4-6
Apex Oximeter Connections	4-7
SpO2 Probe Connection	4-7
Connection to the ApexPro Transmitter	4-7
Accutracker DX Setup	4-8
Tips for Monitoring	4-8
Battery Installation	4-8
Accutracker DX Functional Life	4-9
Accutracker DX Connections	4-10

5

Maintenance	5-1
Biocompatibility	5-3
Inspection	5-4
General Cleaning	5-5
Cleaning the Transmitters	5-6
Cleaning the Leadwires	5-7
Cleaning the Power Unit	5-8
Transmitter and Leadwire Storage	5-9
Incorrect Storage	5-9
Correct Storage	5-9
Technical Maintenance	5-10

6

Telemetry Setup	6-1
Introduction	6-3
Telemetry Factory Default Settings	6-4
Service Password	6-5
Telemetry Unit Defaults	6-6
Viewing Telemetry Unit Defaults	6-6
Graph Setup	6-7
Waveforms	6-7
Transmitter Graph	6-8
Alarm Graph	6-8
Display Lead	6-8
Arrhythmia	6-8
Lead Analysis	6-8
ST Analysis	6-9
Va and Vb Lead	6-9
Detect Pace	6-9
Patient Data Transfer	6-9
Patient Age	6-10
Transmitter Alarm Pause	6-11
Alarm Pause Breakthrough	6-11

CIC Defaults	6-12
Adjusting Alarm Volume	6-14
Current Telemetry Listings	6-15
Admitted Telemetry Patients	6-16
Bed and Transmitters	6-16
Full Disclosure Defaults	6-17

7

Admit/View a Patient	7-1
About Admitting	7-3
Terminology	7-3
Telemetry Monitoring	7-3
Bedside Monitoring	7-3
Locked and Unlocked Beds	7-3
Admit Instructions	7-4
Admit Procedure	7-4
Discharge Instructions	7-6
Clearing a Patient Window	7-7
Viewing a Patient	7-8
Sample	7-8
Relearn	7-8
Viewing Another Patient	7-9
Viewing in the Single Patient Viewer	7-9
Viewing in the Multiple Patient Viewer	7-10
Alarm Condition Indicators	7-12

8

Alarm Control 8-1

Alarm Structure 8-3

Patient Status Alarms	8-3
Colored Window Borders	8-4
Automatic Alarm Graphs	8-4
System Status Alarms	8-4

Alarm Control Tab 8-5

Accessing the Alarm Control Tab	8-5
Parameter Limits	8-6
Parameter Alarm Levels	8-6
Arrhythmia Alarm Levels	8-7
Alarms On/Off	8-8
Alarm Off Reason	8-8
Enable Transmitter Pause	8-9
Recalling Unit Defaults	8-9
Alarm Help	8-9
Printing Alarm Settings	8-10

Factory Alarm Default Settings 8-11

Patient Status Alarms	8-11
Crisis Alarms	8-11
Warning Alarms	8-11
System Status Alarms	8-12
System Warning Alarms	8-12
System Advisory Alarms	8-12

Alarm Unit Default Settings 8-13

Telemetry Alarm Control Defaults	8-13
Parameter Limits	8-14
Parameter Alarm Levels	8-15
Arrhythmia Alarm Levels	8-16

9

Printing 9-1

Initiating a Graph 9-3

Automatic Alarm Graphs	9-3
Transmitter Initiated Graphs (Manual Graphs)	9-3
Graph Messages	9-4

Graph All Patients 9-5

Initiating a Graph All Patients Request	9-6
---	-----

Graph Location Defaults 9-7

Stopping a Graph 9-8

Graph Paper Out Indicator	9-9
--	------------

Graph Setup Tab Sheet	9-10
Graph Waveforms Controls	9-10
ECG 1 Control	9-10
Waveform 2, Waveform 3, and Waveform 4	9-11
Graph Location Controls	9-11
Manual Graph Location	9-11
Alarm Graph Location	9-11
Print Window Location	9-11
Enable Transmitter Graph	9-12
Graph Speed Controls	9-12

Laser Printer	9-13
----------------------------	-------------

10

Patient Data	10-1
---------------------------	-------------

Introduction	10-3
---------------------------	-------------

Alarm Histories	10-4
Event Directory	10-4
Event Window	10-5
Alarm Histories Buttons	10-5
Scan Newer Events	10-5
Scan Older Events	10-5
Print Directory	10-5
View Newer Event	10-5
View Older Event	10-6
Delete Event	10-6
Learn As	10-6
Relearn	10-7

Graphic Trends	10-8
Trend Directory Window	10-9
Cursor	10-9
Time Resolution Menu	10-10
Graphic Trends Buttons	10-10
Deselect All	10-10
Scan Older	10-10
Scan Newer	10-10
Arrow Keys	10-11
Printing Graphic Trends	10-11

Vital Signs	10-12
Sort Mode	10-12
Increment	10-13
Scroll Bars	10-13
Printing Vital Signs	10-13

Full Disclosure	10-14
Full Disclosure Buttons	10-14
Scan Older	10-14
Scan Newer	10-15
Older Event	10-15
Newer Event	10-15
Zoom In	10-15
Print Report	10-15
Time Focus	10-16

11 ECG Monitoring 11-1

Introduction	11-3
Data Synchronization	11-3
Patient Preparation	11-3
Skin Preparation	11-3
Electrode Placement	11-3
ECG Monitoring	11-4
ECG in the Multiple Patient Viewer	11-4
ECG in the Single Patient Viewer	11-5
View Patient Tab Sheet	11-5
Full Disclosure Tab Sheet	11-5
ECG Limits	11-6
ECG Artifact	11-6
ECG Tab Sheet	11-7
Accessing the ECG Tab Sheet	11-7
Display Lead	11-7
Relearn	11-7
Size	11-8
Detect Pace	11-9
Safety Considerations	11-9
Monitoring Pacemaker Patients	11-10
Lead Analysis	11-12
Arrhythmia	11-13
Full Arrhythmia Conditions	11-14
Lethal Arrhythmia Conditions	11-16
PVC Limit	11-16
ST	11-16
ST: V Lead	11-17
ST Analysis	11-17
ST Deviation Alarm	11-18

Arrhythmia Troubleshooting	11-19
Pacemaker Troubleshooting	11-20
ST Troubleshooting	11-22

12 SpO2 Monitoring 12-1

Introduction	12-3
SpO2 Probe Safety	12-3
Infants and Pulse Oximetry	12-4
Signal and Data Validity	12-5
Signal Strength Indicator	12-5
Error Messages	12-5
SPO2 Monitoring	12-6
SPO2 in the Multiple Patient Viewer	12-6
SPO2 in the Single Patient Viewer	12-6
SPO2 Limits	12-7
SPO2 Tab Sheet	12-8
Accessing the SPO2 Tab Sheet	12-8
Rate	12-8
Size	12-8
Troubleshooting	12-9
SpO2 Messages	12-9

13 NBP Monitoring 13-1

Introduction	13-3
Safety Considerations	13-4
Programming the Blood Pressure Monitor	13-5
Setting the Measurement Interval	13-5
Setting Test Parameters	13-6
Setting Limits	13-7
Software and Hardware Versions	13-7
Patient Preparation	13-8
Microphone Placement	13-9
Placement in the Microphone Pad	13-9
Placement in the Blood Pressure Cuff	13-10

NBP Monitoring	13-11
NBP in the Multiple Patient Viewer	13-11
NBP in the Single Patient Viewer	13-11
NBP Limits	13-11
Pressures Tab Sheet	13-12
Accessing the Pressures Tab Sheet	13-12
Auto	13-13
Cuff Size	13-13
Clear Message	13-13
Troubleshooting	13-14
NBP Status Messages	13-14

14

Appendices 14-1

Appendix A — Message Glossary	14-3
Alarm Messages	14-3
Graph Messages	14-5
Transmitter-Related Messages	14-5
System Status Messages	14-6
Patient Status Messages	14-6
Appendix B — Supplies	14-7
Appendix C — Technical Specifications	14-8
ApexPro Transmitter	14-8
Apex Oximeter	14-11
Accutrack DX Noninvasive Blood Pressure Monitor	14-12
ApexPro Receiver Subsystem	14-14
Appendix D — Abbreviations and Symbols	14-15
Abbreviations	14-15
Symbols	14-17

For your notes

Preliminary