Chapter 4

Setup Procedures

This section contains step-by-step instructions for connecting and testing your Model 340 Telemetry System.

IMPORTANT

CHANNEL NUMBERS—Ensure that the receiver and transmitter are operating on the same frequency; the channel numbers must be identical. The channel number label is located on the front of the receiver and on the side of the transmitter.

If you have more than one telemetry system, make sure that each transmitter/receiver pair operates on a unique frequency.

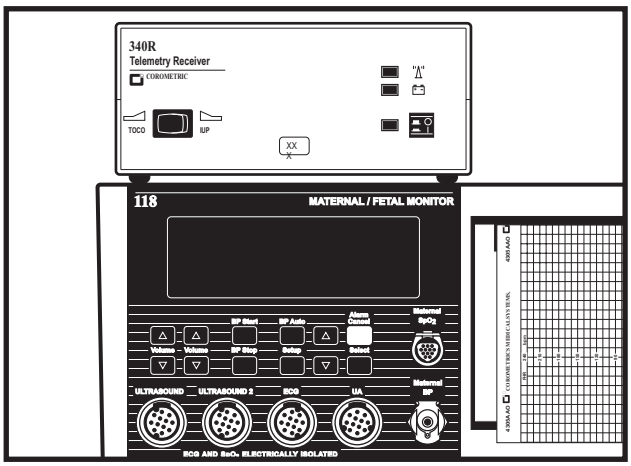
Connecting the Receiver and Monitor 4-2
Setting Up the Transmitter 4-7
Performing a Functional Checkout 4-10

Connecting the Receiver and Monitor

There are two types of interconnection methods depending on the model of your fetal or maternal/fetal monitor. Check your monitor model number prior to making any connections.

Models 115, 116, 118, 145, 150, 151, and 155

1. Turn *off* both the monitor and the receiver.
2. Place the receiver on top of, or near, the monitor.



Note: Model 118 shown.

Figure 4-1. Positioning the Receiver

3. Insert the receiver antenna (longer of the two antennas) into the rear panel **Antenna** connector ⚲; rotate the attachment collar in a clockwise direction until snug.

NOTE: A Remote Antenna Bracket, cat. no. (REF) 1441AAO, is available for attaching the antenna when the receiver will be enclosed in a cart or cabinet. Refer to the Installation Instructions, part no. (REF) 14153AA, included with the bracket; or contact your Biomedical Engineering Department for assistance. To attach the antenna to the BNC connector on the bracket, rotate the antenna attachment collar in a clockwise direction until snug.

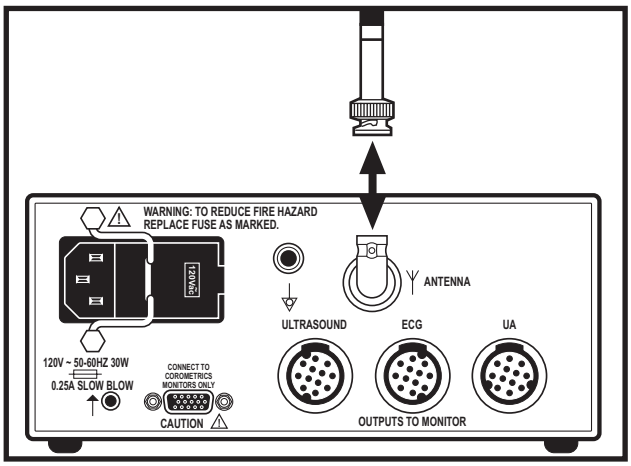


Figure 4-2. Attaching the Receiver Antenna

4. Connect the appropriate ultrasound, ECG, and uterine activity interconnect cables to the corresponding **Ultrasound**, **ECG**, and **UA** connectors on the receiver rear panel.

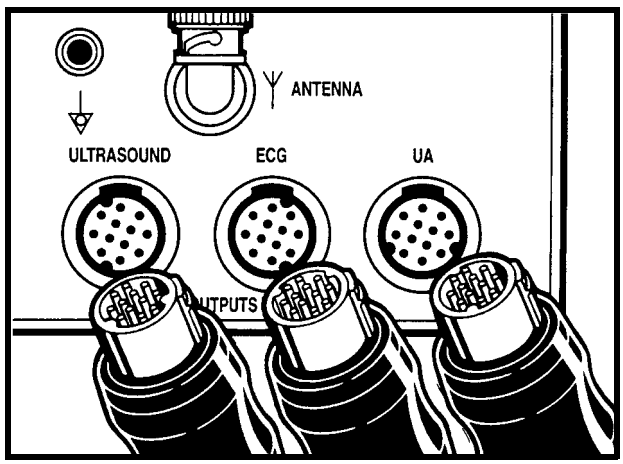
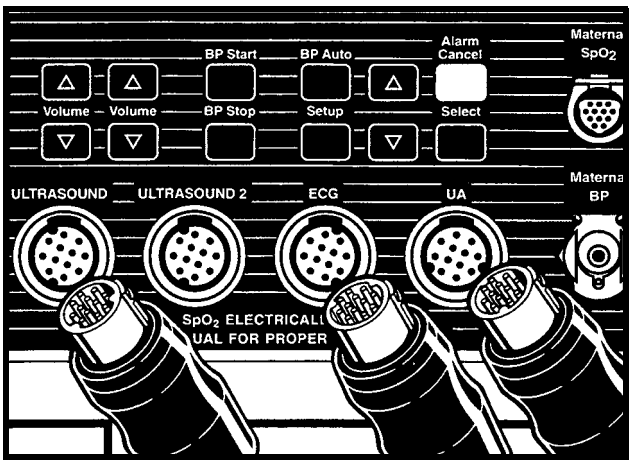


Figure 4-3. Attaching the Receiver Interconnect Cables

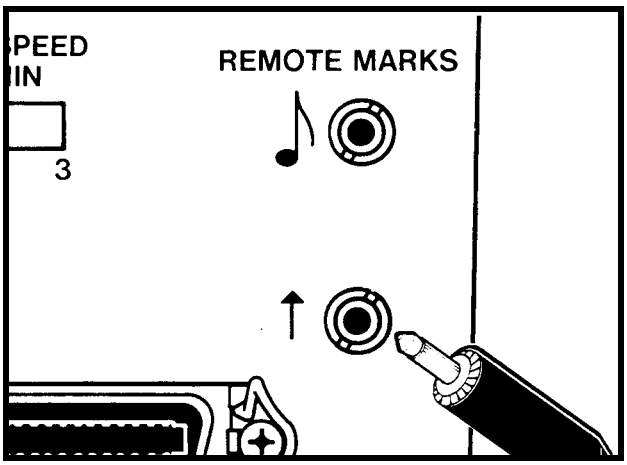
5. Connect the remaining ends of the cables to the color-coded **Ultrasound**, **ECG**, and **UA** input connectors on the front or side panel of the monitor.



Note: Model 118 shown.

Figure 4-4. Attaching the Monitor Interconnect Cables

6. Connect one end of the Remote Event Mark interconnect cable to the ↑ connector on the receiver rear panel; connect the other end to the **Remote Marks** ↑ connector on the rear or side panel of the monitor.



Note: Model 118 shown.

Figure 4-5. Attaching the Remote Mark Interconnect Cable

120 and 170 Series

IMPORTANT
120 SERIES COMMUNICATIONS OPTION—A 120 Series Monitor requires a Communications Board in order to interface to a Model 340 Telemetry System. If your monitor does not have this option, an upgrade kit is available as cat. no. (REF) 1559BAO. Contact your Service Representative for more information.

1. Turn *off* both the monitor and the receiver.
2. Place the receiver on top of, or near, the monitor.
3. Insert the receiver antenna (longer of the two antennas) into the rear panel **Antenna** connector ⚲; rotate the attachment collar in a clockwise direction until snug.

NOTE: A Remote Antenna Bracket, cat. no. (REF) 1441AAO, is available for attaching the antenna when the receiver will be enclosed in a cart or cabinet. Refer to the Installation Instructions, part no. (REF) 14153AA, included with the bracket; or contact your Biomedical Engineering Department for assistance. To attach the antenna to the BNC connector on the bracket, rotate the antenna attachment collar in a clockwise direction until snug.

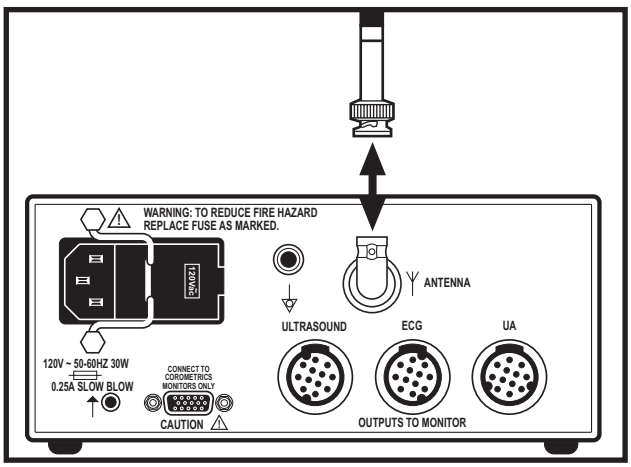


Figure 4-6. Attaching the Receiver Antenna

4. Plug one end of the interconnection cable into the Auxiliary Output connector (**Connect to Corometrics Monitor Only**) on the receiver rear panel.

5. Plug the other end into the respective telemetry connector on the rear panel of the monitor:

   120 Series: Connect to **J101**.

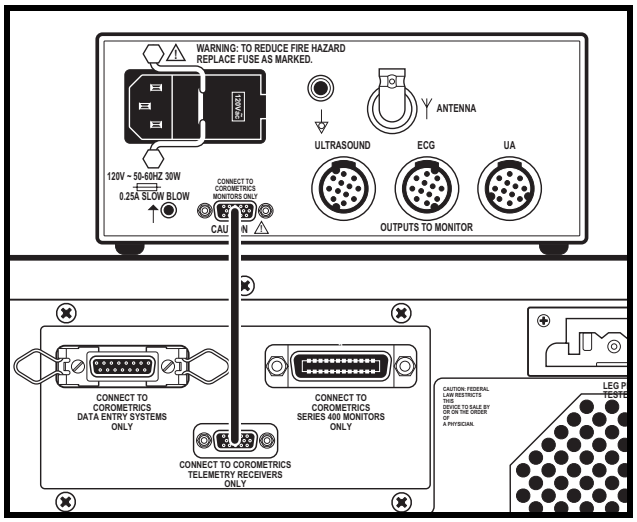


Figure 4-7. Attaching the Monitor Interconnect Cable to a 120 Series Monitor

   170 Series: Connect to the receptacle labeled "⚠".

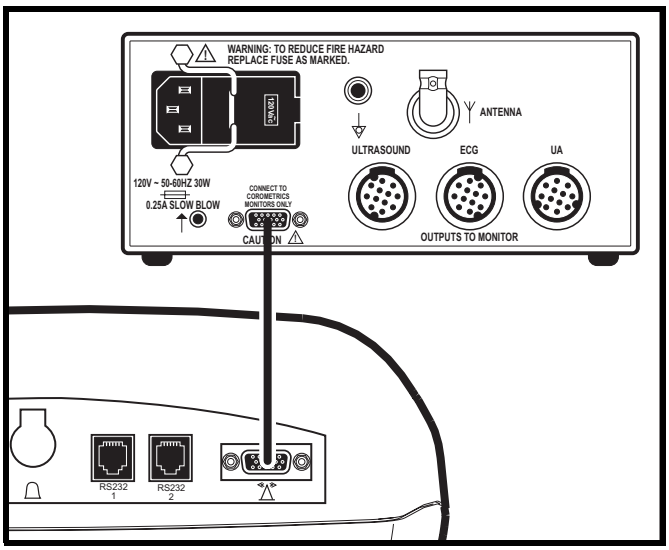


Figure 4-8. Attaching the Monitor Interconnect Cable to a 170 Series Monitor

Setting Up the Transmitter

Installing Batteries

NOTE: If the transmitter will not be used for an extended period of time, remove the batteries to prevent damage due to battery leakage.

1. Turn *off* the transmitter.
2. Locate the battery compartment cover plate on the transmitter rear panel.
3. Remove the cover plate. Use your thumb to lift the raised end.

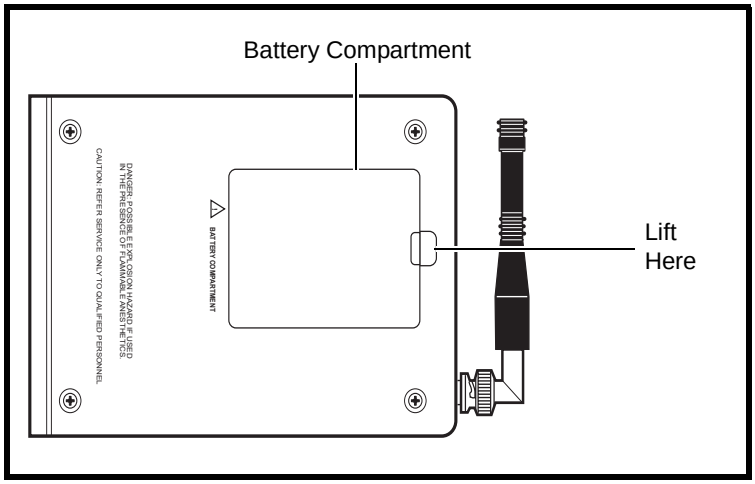
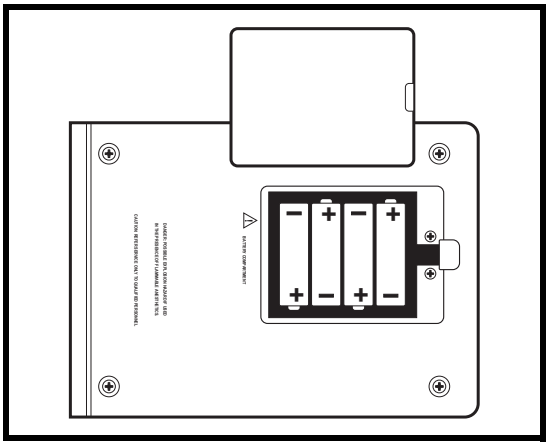


Figure 4-9. Accessing the Batteries

4. Remove the depleted batteries.

CAUTION
BATTERY DISPOSAL—Follow the battery manufacturer's recommendations or your hospital policy for the disposal of used batteries.

5. Insert four new “AA” alkaline batteries, observing the polarity markings in the battery compartment.



Note: Antenna shown removed

Figure 4-10. Transmitter Battery Orientation

6. Replace the battery compartment cover plate. Insert the lip of the cover in the lower portion of the compartment opening; swing the other end of the cover down and snap into place.

Attaching the Antenna

Insert the transmitter antenna (shorter of the two antennas) into the top panel **Antenna** connector; rotate the attachment collar in a clockwise direction until snug.

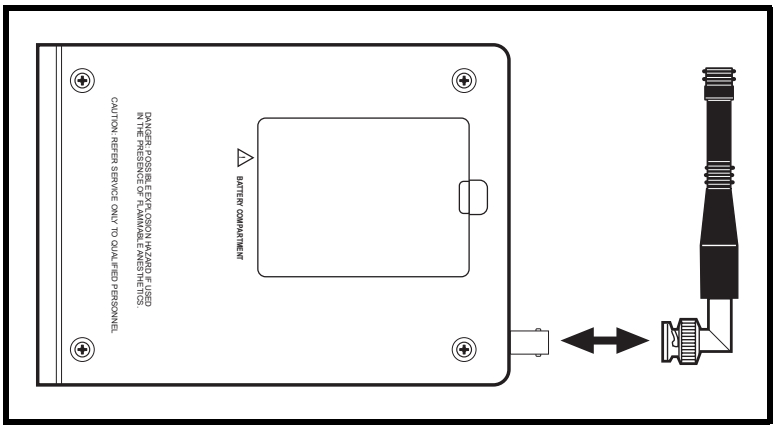


Figure 4-11. Attaching the Transmitter Antenna

Attaching the Carrying Strap

Secure the metal clips at each end of the carrying strap to the belt attachment loops on each side of the transmitter.

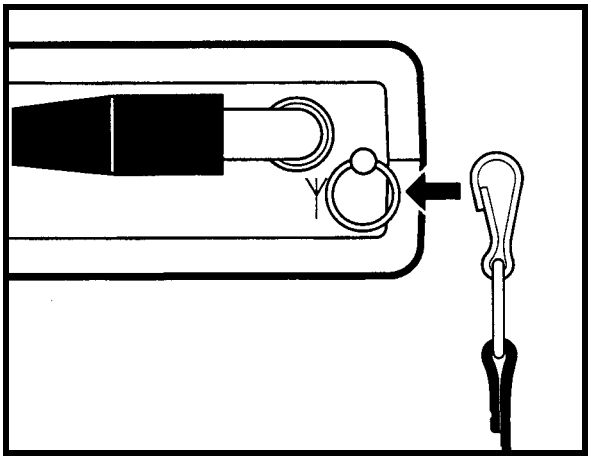


Figure 4-12. Attaching the Carrying Strap

Performing a Functional Checkout

Initial Conditions

Turn *on* the transmitter, the receiver, and the monitor attached to the receiver.

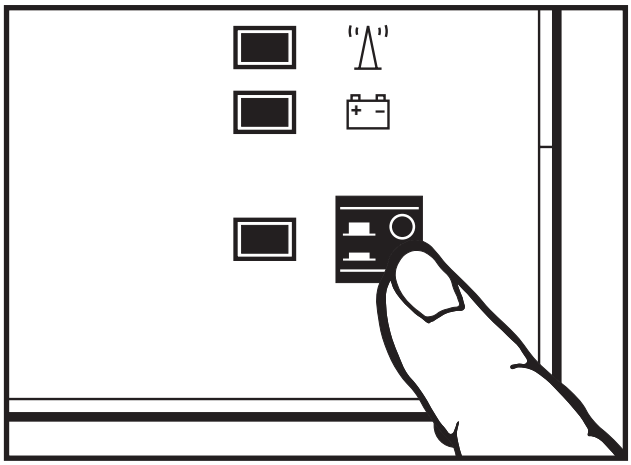


Figure 4-13. Applying Power

Testing the Radio Frequency

1. Check the status of the **Signal** indicator on the receiver:
   - *Continuous Green:* indicates the transmitter is active and the batteries have adequate capacity.
   - *Flashing Green:* indicates the signal strength is weak or marginal.

2. Check the status of the **Battery** indicator on the receiver:
   - *Off:* the transmitter batteries have power.
   - *Flashing Red:* the transmitter batteries are low and should be replaced before further patient use.
   - *Continuous Red:* the transmitter batteries are depleted.

Testing the Ultrasound Functions

IMPORTANT
TRANSDUCER TYPE—Use only Corometrics 5700 Series Ultrasound Transducers with the Model 340 Telemetry System.

1. Plug an ultrasound transducer into the **Ultrasound** connector on the transmitter.

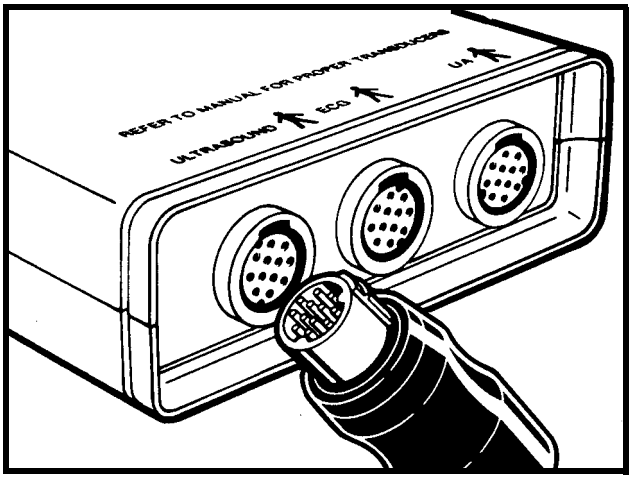


Figure 4-14. Connecting an Ultrasound Transducer

2. Verify the following:

   - *Models 115, 145:* The corresponding FHR display reads 0 BPM.
   - *Models 116, 118, 150, 151, 118, 155 and Series 120, 170:* The corresponding FHR display shows "– – –".

   If the display fails to illuminate, ensure that the corresponding interconnection cable is firmly attached to both the monitor and the receiver.

3. Use your finger to gently rub the ultrasound transducer face in a rhythmic manner—to simulate a FHR. Try to maintain a steady rate and verify the following on the monitor:

   - the corresponding FHR display value responds to the rubbing;
   - the corresponding FHR heartbeat indicator ♥ responds to the input; and
   - the ultrasound audio tones are synchronous with the transducer stroking.

4. Plug the headset into the transmitter's headset connector 🎧.

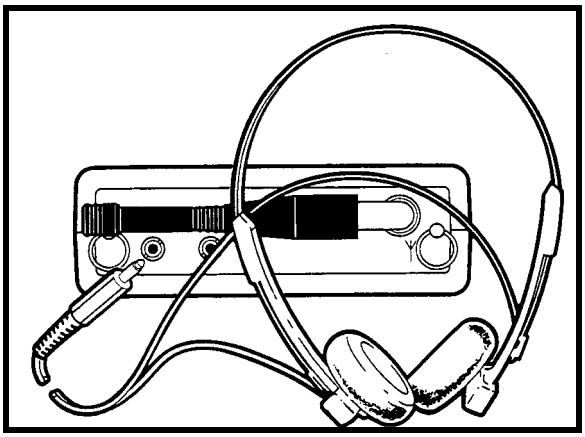


Figure 4-15. Connecting the Headset

5. Rub the face of the ultrasound transducer. Verify that you can hear ultrasound audio tones from both sides of the headset.

Testing the ECG Functions

NOTE: Not all monitors have a legplate tester. Refer to your monitor's operator's manual for complete information.

1. Slide the legplate into the monitor's **Legplate Tester** jack and hold firmly in place. (The legplate tester uses an internal ECG simulator circuit for testing cable/legplate assemblies. The tester simulates a signal of 120 BPM ± 1 BPM.)
2. Plug the other end into the **ECG** connector on the transmitter. Verify the following on the monitor:
   - the corresponding FHR value reads 120 BPM;
   - the corresponding FHR heartbeat indicator ♥ flashes at a rate of 120 times per minute; and
   - the ECG "beep" is heard from the speaker.

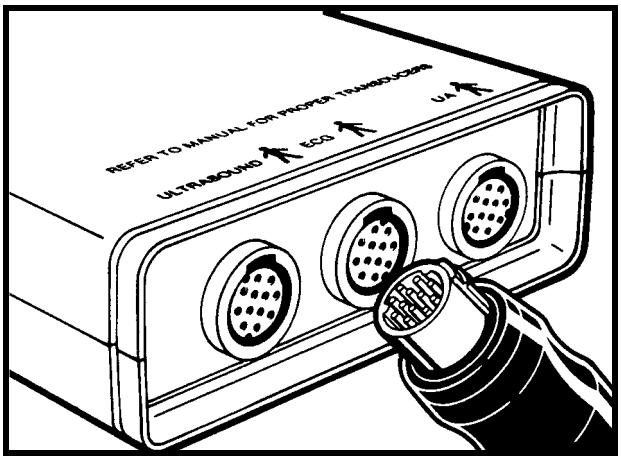


Figure 4-16. Connecting an FECG Cable/Legplate

Testing the UA Functions

1. Place the receiver's **UA Mode Selector** switch in the **TOCO** position.

IMPORTANT
TRIMLINE TOCOTRANSDUCERS—If the monitor is *on* when you connect or re-connect a Trimline Tocotransducer to the **UA** connector, you must wait at least 10 seconds before pressing the **UA Reference** button. If the monitor is *off*, you must wait at least 10 seconds from the time the monitor is powered on.

2. Plug a tocotransducer into the transmitter's **UA** connector. Verify the following on the monitor:
   - *If the monitor has a UA display:* the display reads an arbitrary pressure value.
   - *If the monitor does not have a UA display:* turn on the strip chart recorder and check that TOCO prints on the paper's mode annotation line.

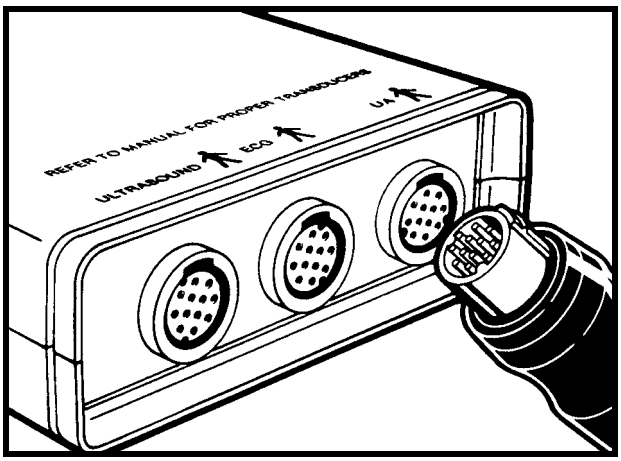


Figure 4-17. Connecting a Tocotransducer or IUPC Cable

IMPORTANT
DEFAULT REFERENCE VALUE—Most monitors have a default UA reference of 10 relative units. Take into consideration that newer model monitor's can be configured to store a custom default value.

3. Press the monitor's **UA Reference** button to set the UA value to 10 relative units. Verify the following on the monitor:

   - *If the monitor has a UA display:* the display reads 10 relative units.
   - *If the monitor does not have a UA display:* turn on the strip chart recorder and check that the UA REF message and TOCO mode annotation both print on the paper.

4. Apply gentle pressure to the tocotransducer pressure sensing button and verify that the monitor (display or uterine activity trace) responds to the pressure input. Increasing force should produce an increasing value and vice versa.

   If no pressure changes are recorded, ensure that the corresponding interconnection cable is firmly attached to both the monitor and the receiver.

5. *This step applies to monitors which support IUP monitoring.* Place the receiver's **UA Mode Selector** switch in the **IUP** position. Verify the following on the monitor:

   - *If the monitor has a mode indicator:* the IUP mode should be indicated.
   - *If the monitor does not have a mode indicator:* turn on the strip chart recorder and check that the IUP mode annotation prints on the paper.

   NOTE: Place the **UA Mode Selector** switch back in the **TOCO** position unless you plan to monitor with an IUPC.

Testing the Remote Event Marker Function

1. Plug the Remote Event Marker into the transmitter's **Remote Marks** connector.
2. Turn on the monitor's strip chart recorder.
3. Press the Remote Event Marker's pushbutton for at least one second. Verify that an appropriate mark is printed on the paper:
   - ↑: This annotation is commonly used to record an "event." This mark is available on all Corometrics-brand monitors.
   - FM↑: This annotation is commonly used as an indication that the mother has perceived fetal movement. (Refer to your monitor's operator's manual to learn if your monitor supports this feature. Refer to your monitor's service manual for information about enabling the option.)

Testing the Environment

Decide on which areas of your facility will be used for ambulatory monitoring. Test each location separately to rule out rooms that are restricted due to metal structures blocking signal transmission.

Chapter 5

Monitoring via Telemetry

This section provides a brief overview of telemetry monitoring procedures. Refer to the "Maternal/Fetal Monitoring Operator's Manual" for patient application information. Also refer to your monitor's operator's manual.

Suggestions for Ambulatory Monitoring. 5-2
Monitoring Reminders 5-3

Suggestions for Ambulatory Monitoring

IMPORTANT
DESIGNATED AREAS—Show the patient the areas that are within signal range and where signal reception is clear.

1. Instruct the patient to wear the transmitter with the antenna pointed *towards* the receiver when possible.
2. Adjust the carrying strap to a comfortable length.
3. Encourage the patient to walk in a smooth, gliding motion. It is preferable to slide feet rather than moving quickly which may cause bouncing and artifact.
4. Instruct the patient, following each fetal movement, to listen via the headset, for continued fetal heart rate tones.
5. Make sure the transducer cables are not dragging on the floor. If the patient is in danger of tripping over the cables, drape them over the patient's arm; or shorten the length by taping a loop.

NOTE: Transducers with short cables are available. Contact your *Information Technologies* Sales Representative.

Monitoring Reminders

General

- Use the correct interconnection method according to your monitor model. See page 4-2 and page 4-5.
- Remember to apply power to all three devices: monitor, receiver, and transmitter.
- Check that each interconnection cable is firmly attached to both the receiver and the monitor.
- As soon as any telemetry mode is detected, the front panel of the 120 or 170 Series Monitor is disabled and all front panel inputs are ignored. In other words, telemetry and monitor modes cannot be “mixed and matched”; you must use telemetry only or direct monitoring only.

IMPORTANT
170 SERIES—For proper operation with a 170 Series Monitor, disconnect all transducers from the front panel of the monitor.

Ultrasound

- Use only Corometrics 5700 Series ultrasound transducers with a Model 340 Telemetry System.
- Remind the patient to use the headset to check for continual pickup of the fetal heart rate signal following each fetal movement.

FECG

- You may need to tape the transducer cable to the patient to prevent excessive tension on the legplate or attachment pad.
- The recommended position for the legplate is on top of the upper thigh instead of the inner thigh. This facilitates walking and minimizes fluid contacting the legplate.

Tocotransducer

- Remember to place the receiver's **UA Mode Selector** switch in the **TOCO** position.
- When connecting or re-connecting a Corometrics Trimline Tocotransducer to the transmitter's **UA** connector, you must wait at least 10 seconds before pressing the monitor's **UA Reference** button. If any device (monitor, receiver, transmitter) is off, you must wait at least ten seconds from the time the last device is powered on.

IUP

- Remember to place the receiver's **UA Mode Selector** switch in the **IUP** position.

Chapter 6

Maintenance

All equipment, no matter how reliable, needs to be maintained on a regular basis. This section describes general care and cleaning instructions for the Model 340 Telemetry System.

General Cleaning Precautions 6-2
Cleaning the Transmitter and Receiver 6-3

General Cleaning Precautions

NOTE: Refer to your monitor's operator's manual for cleaning instructions for the monitor and transducers.

CAUTION
SHOCK—Unplug the fetal or maternal/fetal monitor and the receiver from the AC power source and detach all accessories. Do not immerse accessories in any liquid. Do not use abrasive cloth or cleaners on the monitor, the receiver, the transmitter, or any accessories.

Cleaning the Transmitter and Receiver

1. Wipe any fluids from the surface of each unit.
2. Dampen a soft cloth with isopropyl alcohol and gently rub soiled area until clean.
3. Dry with a soft, dry cloth.

For your notes

Chapter 7

Troubleshooting

This section of the manual provides a troubleshooting guide for the most basic Model 340 operational problems. If the response to a specific question is not found, contact the Service Department at one of the following telephone numbers:

Inside the United States:	Call 1-800-558-5120.
Outside the United States:	Call 414-355-3790; or contact your local distributor.

Problem Chart

Table 7-1. Troubleshooting			
Problem		**Probable Cause**	**Solution**
Receiver **Power** indicator does not light when the receiver is turned on.		■ Receiver not connected to AC receptacle. ■ Defective AC power cord. ■ Defective AC outlet.	■ Connect to AC receptacle. ■ Replace AC power cord. ■ Use a different AC outlet.
	Signal indicator flashes with transmitter turned on.	■ Transmitter batteries completely discharged. ■ Mismatched transmitter and receiver channels.	■ Replace batteries. Dispose of used batteries according to the manufacturer's directions. ■ Ensure transmitter and receiver are labeled with identical channel numbers.
	Signal indicator flashes intermittently as patient ambulates.	■ Patient outside signal transmission range. ■ Metal in walls, doors, or other structures between transmitter and receiver.	■ Instruct patient to stay within signal range and designated areas where reception is clear. ■ Install optional ceiling antenna system. ■ Contact your *Information Technologies* Service Representative.
	Signal and **Low Battery** indicators light with transmitter turned off.	■ External source of radio frequency interference is present. ■ Another transmitter with the same frequency is in use within the same facility. ■ Service required.	■ Contact your *Information Technologies* Service Representative. ■ Discontinue use of one of the transmitters. **NOTE:** Model 340 Plus and Model 340M Telemetry Systems can be factory re-programmed to an alternative channel number. ■ Contact your *Information Technologies* Service Representative.
	Low Battery indicator flashes with transducers plugged into transmitter.	Transmitter batteries have less than 10 minutes of energy left.	Replace the batteries. Dispose of used batteries according to the manufacturer's instructions.
	Low Battery indicator lights continuously with no transducers plugged into transmitter.	Transmitter batteries are depleted.	Replace the batteries. Dispose of used batteries according to the manufacturer's instructions.

Table 7-1. Troubleshooting (Continued)		
Problem	**Probable Cause**	**Solution**
Erratic FHR/UA recording.	■ Transducer not properly placed. ■ Transducer not properly connected to transmitter. ■ Receiver interconnection cable(s) not properly attached. ■ Receiver interconnection cable(s) defective. ■ Wrong interconnection cable(s) in use. ■ Radio frequency interference. ■ Another transmitter with the same frequency is in use within the same facility. ■ Exceeding transmission range. ■ Shielding effect of hospital structure.	■ Reposition transducer. ■ Ensure the transducer is securely attached to the transmitter. ■ Ensure interconnection cable(s) firmly attached to both monitor and receiver. ■ Replace interconnection cable(s). ■ Verify interconnection method. ■ Instruct patient to stay within signal range and designated areas where reception is clear. ■ Discontinue use of one of the transmitters. **NOTE:** Model 340 Plus and Model 340M Telemetry Systems can be factory re-programmed to an alternative channel number. ■ Install optional ceiling antenna system. ■ Contact your *Information Technologies* Service Representative.
Monitor FHR and UA displays do not light when transducers are plugged into transmitter.	■ Monitor, transmitter, and/or receiver off. ■ Receiver interconnection cable(s) not properly attached. ■ Receiver interconnection cable(s) defective. ■ Wrong interconnection cable(s) in use.	■ Ensure all three devices are turned on. ■ Ensure interconnection cable(s) firmly attached to both monitor and receiver. ■ Replace interconnection cable(s). ■ Verify interconnection method.
Transmitter “chirps” every 4–5 seconds.	Transmitter batteries have less than 10 minutes of energy left.	Replace the batteries. Dispose of used batteries according to the manufacturer’s instructions.

For your notes

Chapter 8

Supplies and Accessories

This section provides an overall listing of supplies and accessories for use with a Corometrics Model 340 Telemetry System and with Corometrics Fetal or Maternal/Fetal Monitors. To order any of the supplies and accessories listed in this manual:

Inside the United States: Call 1-800-558-5120.

Outside the United States: Call 414-355-3790;
or contact your local distributor.

This chapter contains the following information:

General 8-2
Paper 8-3
Ultrasound 8-4
FECG 8-5
Tocotransducer 8-6
IUPC 8-7
MECG 8-8

General

Table 8-1. General Supplies	
Item	**Catalog Number (REF)**
Detachable IEC AC Power Cord, United States Plug	1392AAA
Remote Event Marker, 8-foot Cord	3919BAO
Remote Event Marker, 5-foot Cord	3919CAO
Headset for Model 340 Telemetry System	3316AAO
Ultrasound Interconnect Cable (Models 115, 145 only)	1399AAO
Ultrasound Interconnect Cable (Models 116, 118, 150, 151, 155 only)	1399BAO
ECG Interconnect Cable (Models 115, 116, 118, 145, 150, 151, 155 only)	1375BAO
UA Interconnect Cable (Models 115, 116, 118, 145, 150, 151, 155 only)	1400AAO
Mark Interconnect Cable (Models 115, 116, 118, 145, 150, 151, 155 only)	1397AAO
System Interconnect Cable (Series 120, 170 only)	1563AAO
Remote Antenna Bracket with Extension Cable for Cart Use	1441AAO
Model 2116B Clinical-Notes/Data-Entry System	2116BAX
Model 3116 LDR/LDRP Bonnet Style Mobile Cart—Finished	3116AAO
Model 3116 LDR/LDRP Bonnet Style Mobile Cart—Unfinished	3116BAO
Model 3116 LDR/LDRP Bonnet Style Mobile Cart with Hinged Drawer Front—Unfinished	3116DAO
Model 3116 LDR/LDRP Bonnet Style Mobile Cart with Hinged Drawer Front—Finished	3116EAO
Model 146 Fetal Acoustic Stimulator	0146AAY

Paper

Table 8-2. Paper Supplies	
Item	**Catalog Number (REF)**
Z-Fold Chart Paper Pack, 30–240 BPM Heart Rate Scale (40/carton)	4305CAO
Z-Fold Chart Paper Pack, 50–210 BPM Heart Rate Scale (40/carton)	4305DAO
Chart Guard Label Packet	4914BAO

Ultrasound

Table 8-3. Ultrasound Supplies	
Item	**Catalog Number (REF)**
Loop-Style Ultrasound Transducer, 5-foot Cord	5700EAX
Loop-Style Ultrasound Transducer, 8-foot Cord	5700AAX
Loop-Style Ultrasound Transducer, 10-foot Cord	5700CAX
Button-Style Ultrasound Transducer, 5-foot Cord	5700FAX
Button-Style Ultrasound Transducer, 8-foot Cord	5700BAX
Loop-Style Ultrasound Transducer (Nautilus), 5-foot Cord	5700KAX
Loop-Style Ultrasound Transducer (Nautilus, 8-foot Cord	5700LAX
Loop-Style Ultrasound Transducer (Nautilus), 10-foot Cord	5700MAX
Button-Style Ultrasound Transducer (Nautilus), 5-foot Cord	5700GAX
Button-Style Ultrasound Transducer (Nautilus), 8-foot Cord	5700HAX
Loop-Style Ultrasound Transducer (Nautilus), 5-foot Cord	5700JAX
Ultrasound Coupling Gel Bottle, 250 ml (12/carton)	2434AAO
Ultrasound Coupling Gel Bottle, 5 liter	2475AAO
Reusable Belt for Loop-Style Transducer, Mesh Style (10/carton)	4425AAO
Reusable Belt for Loop-Style Transducer, Velcro Style (10/carton)	4425CAO
Reusable Belt for Button-Style Transducer, Elastic Style (10/carton)	4425EAO
Semi-Reusable Belt for Loop-Style Transducer, Velcro Style (2/pack; 50 packs/carton)	4425FAO
Single-Patient Use Belt for Loop-Style Transducer, Foam Style with Velcro Closure	8024AAO

IMPORTANT

TRANSDUCER TYPE—Use only Corometrics 5700 Series Ultrasound Transducers. Do not use a Corometrics 5600 Series Transducer. The 5600 Series Transducers are only for direct connection to a Model 115 or Model 145 Fetal Monitor or for use with a Model 320 or Model 330 Telemetry System.

FECG

Table 8-4. FECG Supplies	
Item	**Catalog Number (REF)**
Qwik Connect *Plus* Spiral Electrode (50/carton)	7000AAO
Legplate for Qwik Connect *Plus* Spiral Electrode, 8-foot Cord	1590AAO
Strap Adaptor for Qwik Connect *Plus* Spiral Electrode Legplates	1594AAO
ECG Conductive Cream Bottle, 118 ml (12/carton)	4514AAO
Reusable Legplate Strap with Velcro Closure (24/carton)	2023AAO
Single-Patient Use Legplate Strap	8036AAO

Tocotransducer

Table 8-5. Tocotransducer Supplies	
Item	**Catalog Number (REF)**
Loop-Style Tocotransducer (Nautilus), 5-foot Cord	2264KAX
Loop-Style Tocotransducer (Nautilus), 8-foot Cord	2264LAX
Loop-Style Tocotransducer (Nautilus), 10-foot Cord	2264MAX
Button-Style Tocotransducer (Nautilus), 5-foot Cord	2264GAX
Button-Style Tocotransducer (Nautilus), 8-foot Cord	2264HAX
Button-Style Tocotransducer (Nautilus), 10-foot Cord	2264JAX
Reusable Belt for Loop-Style Transducer, Mesh Style (10/carton)	4425AAO
Reusable Belt for Loop-Style Transducer, Velcro Style (10/carton)	4425CAO
Reusable Belt for Button-Style Transducer, Elastic Style (10/carton)	4425EAO
Semi-Reusable Belt for Loop-Style Transducer, Velcro Style (2/pack; 50 packs/carton)	4425FAO
Single-Patient Use Belt for Loop-Style Transducer, Foam Style with Velcro Closure	8024AAO

IUPC

Table 8-6. IUPC Supplies	
Item	**Catalog Number (REF)**
Corometrics Softrans IUPC with Amnio Infusion/Sampling Capabilities (10/carton)	2076AAO
Corometrics Softrans Intermediate Cable	1336AAO
Reusable Strain Gauge Pressure Transducer, 10-foot Cord (with Holder)	4007BAX
Reusable Strain Gauge Pressure Transducer, 10-foot Cord (without Holder)	4007LAX
Holder for Reusable Pressure Transducer	4516BAO
IUP Kit with Syringe for Reusable Pressure Transducer (50/carton)	2069AAO
Single-Patient Use Sterile Dome (10/carton)	5512AAO
Single-Patient Use Sterile Dome (120/carton)	5512BAO
Reusable Dome (5/carton)	5507AAO
Pressure Relief Valve for Pressure Transducer Dome (5/carton)	8070AAO
Disposable Strain Gauge Pressure Transducer (10/carton)	4009AAX
Holder for Disposable Pressure Transducer	4519AAO
Holder Assembly for Disposable Pressure Transducer	4518BAO

MECG

Table 8-7. MECG Supplies	
Item	**Catalog Number (REF)**
MECG Cable (round connector) for use with detachable leadwires, USA/AHA	1554AAO
MECG Cable (round connector) for use with detachable leadwires, Intl./IEC	1554BAO
Multi-Link Snap Leadwires, Set of 3, Grouped Detachable, 31 inches	411203-001
Multi-Link Snap Leadwires, Set of 5, Individually Detachable, 31 inches	411200-001
Multi-Link Grabber Leadwires, Set of 3, Grouped Detachable, 31 inches	412682-001
Multi-Link Grabber Leadwires, Set of 5, Individually Detachable, 31 inches	414556-001
Leadwire Adapter, 3-Lead Multi-Link to 3-Lead DIN	414371-001
Electrodes, Round, Foam, Pouches of 30, Case of 300	9431-004

Chapter 9

Technical Specifications

NOTE: Specifications are subject to change without notice.

This section contains a detailed list of the technical specifications for the Model 340 Telemetry System.

This chapter lists specifications for the following:

Transmitter 9-2
Receiver. 9-4

Transmitter

Table 9-1. Transmitter		
Category	**Technical Specifications**	
Physical Characteristics Height: Width: Depth: Weight:	 1.8 in (4.5 cm) 5.4 in (13.8 cm) 7.5 in (19.0 cm) 1.75 lbs (0.8 kg)	
Environmental Conditions Ambient Temperature: Relative Humidity: Atmospheric Pressure:	**Operating** 50°F to 104°F (10°C to 40°C) 5% to 95%, non-condensing 700–1060 mbar (525–795 mmHg)	**Storage** 14°F to 131°F (–10°C to 55°C) 5% to 95%, non-condensing 700–1060 mbar (525–795 mmHg)
Certification and Compliance UL: FCC: Industry Canada:	**340 Original Release and Plus** UL-544 Listed Complies with FCC Part 90 Complies with RSS-119	**340M** UL-544 Listed Complies with FCC Part 95 Complies with RSS-210
Monitoring Modes Fetal Heart Rate: Uterine Activity: Maternal Heart Rate:	 Ultrasound (US) and Fetal ECG (FECG) External Tocotransducer (TOCO) or Internal Intrauterine Pressure Catheter (IUPC) Maternal ECG (MECG)	
Ultrasound Mode System: Transmitter Frequency: Intensity (I_{sata}):	 Pulse Doppler 1.151 MHz <5 mW/cm^2	
ECG Mode Input Impedance: dc Tolerance: Common Mode Rejection Ratio: FECG Sensitivity: MECG Sensitivity:	 >1 GΩ ±1 V >90 dB 20 µV to 1 mV 0.5 mV to 5 mV	
TOCO Mode Type: Sensitivity: Range:	 Tocotransducer 20 µV/relative unit –50 to +250 relative units	
IUPC Mode Type: Sensitivity: Range:	 dc Strain Gauge 20 µV/mmHg –50 to +250 mmHg	
RF Section Output Power: Available Frequencies: Channel Bandwidth:	**340 Original Release and Plus** 10 mW 430–470 MHz 25 kHz	**340M** 4 mW 608–614 MHz 25 kHz
Transmission Range:	**340 Original Release and Plus** 1640 ft (500 m), line of sight	**340M** 200 ft (61 m), line of sight

Table 9-1. Transmitter	
Category	**Technical Specifications**
Antenna Type:	Flexible, detachable, BNC interconnect
Batteries Type: Life:	 Four “AA” Alkaline Cells, 6.0 Vdc at 2450 mAh 20 h, approximately[a]
Control:	On/Off Switch
Audio Indicator:	Low Battery
Connectors:	Remote Event Marker Input, Headset Output

[a] *Use of the headset will deplete the batteries more rapidly*.

Receiver

Table 9-1. Receiver		
Category	**Technical Specifications**	
Power Requirements		
Nominal Line Voltage:	100–120 VAC	220–240 VAC
Line Frequency:	50/60 Hz	50/60 Hz
Power Consumption (maximum):	30 W	30 W
Chassis Leakage:	<50 µA	
Physical Characteristics		
Height:	3.2 in (8.1 cm)	
Width:	7.4 in (18.8 cm)	
Depth:	11.4 in (29.0 cm)	
Weight:	7.0 lbs (3.2 kg)	
Environmental Conditions	**Operating**	**Storage**
Ambient Temperature:	50°F to 104°F (10°C to 40°C)	14°F to 131°F (–10°C to 55°C)
Relative Humidity:	5% to 95%, non-condensing	5% to 95%, non-condensing
Atmospheric Pressure:	700–1060 mbar (525–795 mmHg)	700–1060 mbar (525–795 mmHg)
Certification and Compliance	**340 Original Release and Plus**	**340M**
UL:	UL-544 Listed	UL-544 Listed
FCC:	Complies with FCC Part 15	Complies with FCC Part 15
Industry Canada:	Complies with RSS-119	Complies with RSS-210
Output Signals:	US, ECG, UA, and Mark	
RF Section		
Input Impedance:	50 Ω	
Input Sensitivity:	<0.4 µV for 12 dB SINAD	
Antenna Type:	Flexible, detachable, BNC interconnect (Other factory-approved external antennas or antenna systems may be used. Contact your *Information Technologies* Service Representative for more information.)	
Controls:	On/Off Switch, UA Mode Switch	
Visual Indicators:		
Power:	Green LED	
Signal Strength:	Green LED	
Transmitter Low/Depleted Battery:	Red LED	
Connectors		
AC Line Input:	3-Prong, IEC-Style	
Mark Output:	Use only with Models 115, 116, 118, 145, 150, 151, and 155 Monitors.	
Ultrasound Output:	Use only with Models 115, 116, 118, 145, 150, 151, and 155 Monitors.	
ECG Output:	Use only with Models 115, 116, 118, 145, 150, 151, and 155 Monitors.	
UA Output:	Use only with Models 115, 116, 118, 145, 150, 151, and 155 Monitors.	
Auxiliary Output:	Use only with Series 120 and 170 Monitors.	

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