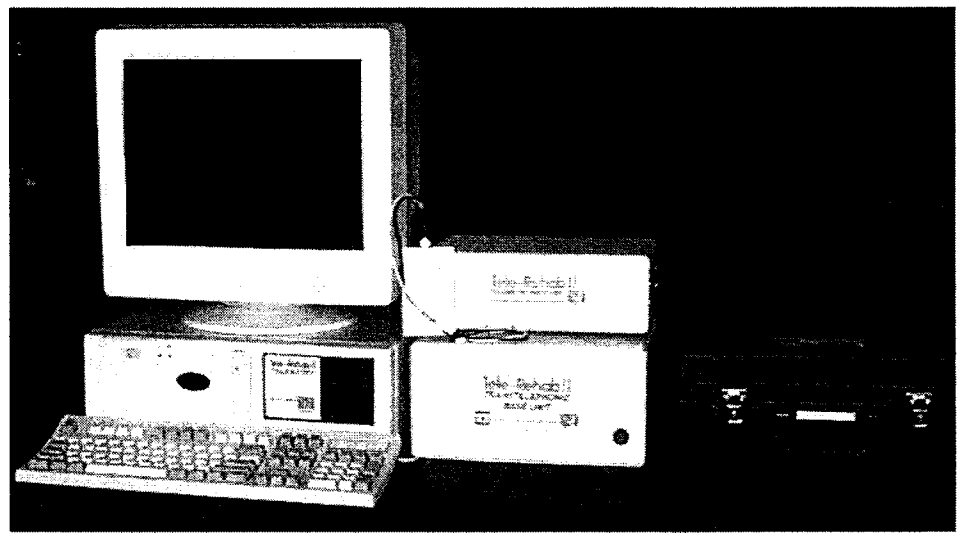
The Tele-Rehab II™ Cardiopulmonary Monitoring System

Function

The Tele-Rehab II™ Cardiopulmonary Monitoring System measures the electrical activity of a patients heart during exercise and transmits it either via radio frequency or via the telephone system, to a central monitoring station. The monitoring station displays the patients real time ECG waveforms and uses alarms to indicate the presence of an arrhythmia. The clinician can then determine if the event causing the alarm is of significance. The Tele-Rehab II™ Cardiopulmonary Monitoring System enables the clinician to view and edit various data items and record ECG strips for later inclusion in reports. Various reports are available and can be printed using an optional laser printer.

Components

The system consists of a computerized central unit with strip chart recorder and keyboard, display monitor with touchscreen, receiver module with antenna (not shown), portable transmitters that are worn by the patients, laser printer (not shown), and optional patient kits for transtelephonic monitoring applications.



Computerized Central Unit with Strip Chart Recorder and Keyboard. The computer provided with the Tele-Rehab II™ Cardiopulmonary Monitoring System is an IBM compatible computer with a 3-1/2 inch 1.44 Megabyte floppy drive and a fixed disk of a size adequate to meet the needs of the cardiac rehabilitation program. The computer houses the electronics necessary for the monitoring system to function, and also houses the thermal paper strip chart recorder. The keyboard provided is a standard 102 key keyboard.

Display Monitor with Touchscreen. The Display Monitor provided is a 17 SVGA Color Monitor with touchscreen. Touchscreen types provided are either infrared or capacitive depending upon the monitor manufacturer.

Receiver Module with Antenna. The Receiver Module houses from one to eight individual telemetry receivers for the telemetry system. The antenna provided is a table top, 1/4 wave, ground plane antenna.

Telemetry Transmitters. Telemetry Transmitters provided transmit the ECG signal back to the Receiver Module for processing. They are equipped with either a two wire or three wire patient cable depending on the option selected, and are powered by a standard 9 volt alkaline battery. A button is provided that sends a signal to the central unit causing a strip to be identified as saved when depressed.

Laser Printer. The Laser Printer provides a means of printing the various reports available in the system. Laser Printers provided may be by various manufactures, and function appropriately with the Tele-Rehab™ System when set at their default settings.

Patient Kit. The Patient Kit contains all the hardware necessary to transmit an ECG to the central monitoring station over a Plain Old Telephone System (POTS). Both ECG data and voice are transmitted simultaneously to provide real time monitoring.

Controls

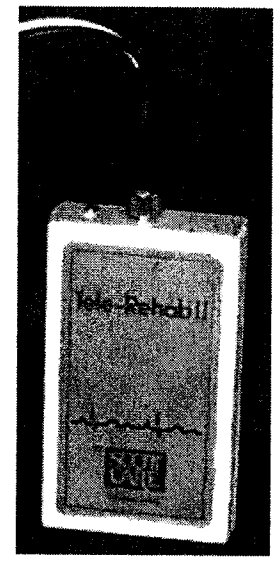
System Power. Each major component is typically powered through a power strip. The individual power switches are used to power each individual component.

Touchscreen. The areas on the screen that cause the system to respond when touched are clearly defined on each screen. For each touch capability, there is a corresponding key stroke that will accomplish the same task allowing complete operation from the keyboard alone if desired.

Computer Keyboard. The Computer Keyboard provides a means of entering data into the system. The keyboard can also be used to cause the system to change functions in lieu of the touchscreen. All input other than the ECG and data extracted from the ECG data is entered into the system either with the keyboard or touchscreen.

Volume Control. The Volume Control on the front of the Central Unit (if present) controls the audio volume when communicating with a patient being monitored using the transtelephonic option.

Telemetry Transmitters

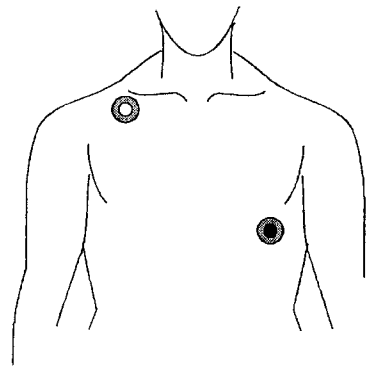


The TELE-REHAB II™ telemetry transmitters are powered by a 9 volt alkaline battery provided with each transmitter. Install the battery in the battery compartment by placing the end of the battery with terminals into the compartment against the spring clips, and pressing the battery into the compartment. Note that polarity is not important, the battery can be installed either way. Be sure to replace the battery cover. The transmitters are designed to operate at optimum efficiency for approximately 60 hours, or until the loaded battery voltage gets down to approximately 7 volts.

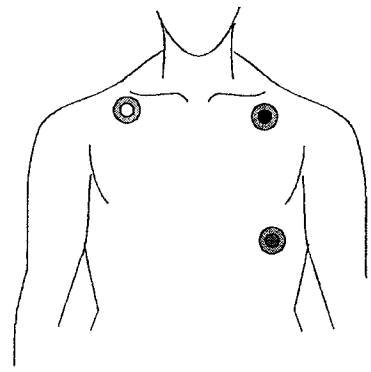
Install the patient lead cable by placing the connector on the end of the cable against the receptacle on the transmitter and turning it until the key way engages and it drops into place. Turn the knurled nut clockwise until it is snug. WARNING: DO NOT OVER TIGHTEN CONNECTORS!

The small red push switch on the top of the telemetry transmitter provides a means of identifying strips to be saved when depressed.

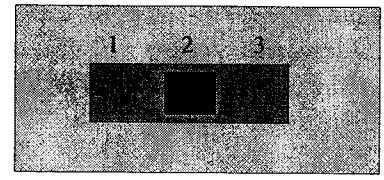
NOTE: There is no off-on switch for the telemetry transmitter. When the battery is installed AND the patient cable is connected, the transmitter is energized. You *can store transmitters with EITHER batteries installed OR patient leads attached. Storing with BOTH batteries installed and patient leads attached will result in very short battery life.*



Prep the patient and attach the monitoring electrodes. ScottCare recommends the use of a prep medium such as NuPrep™ or OmniPrep® to reduce the possibility of artifact caused by poor patient contact. Arm electrodes should be placed above the pectoral muscles just under the clavicle, and the Left Leg electrode should be placed on the lower left rib area to minimize the possibility of artifact due to muscle activity. For further information, see the section on **Control of Artifact.**



The Tele-Rehab™ telemetry transmitters are supplied in either a two wire or three wire configuration. The two wire units are designed to provide the capability of monitoring a single lead configuration dependent upon electrode placement. The two wires provided are black and white. The white wire should be connected to the right arm electrode for Lead I (Right Arm/Left Arm) and Lead II (Right Arm/Left Leg), and to the left arm electrode for Lead III (Left Arm/Left Leg).



The three wire telemetry transmitters are equipped with a switch allowing the selection of one of the three available lead configurations, Lead I (Right Arm/Left Arm), Lead II (Right Arm/Left Leg), or Lead III (Left Arm/Left Leg). The three wires provided are black, white and red. The white wire should be connected to the right arm electrode, the black wire to the left arm electrode, and the red wire to the left leg electrode. Set the switch to the position indicating the desired Lead to be monitored.

Patient Kits

Patient Kits are supplied packaged in a container designed to hold each component for easy storage and/or shipping

Each Patient Station consists of all the hardware necessary to transmit an ECG to the central monitoring station over a Plain Old Telephone System (POTS). ECG data, voice, and in some cases SpO2 data are transmitted simultaneously to provide real time monitoring.

Installation and operation instructions are provided with each kit.