



Fig. 4-1 Transceiver Unit

- 1. Power Switch:** A push-button control that when depressed turns the unit ON. Power ON is indicated by illumination of one of the four green Volume Setting LED's. When the push-button is depressed a second time the unit is turned OFF.
- 2. Battery Low Indicator:** A yellow LED which, when illuminated, indicates that the batteries are nearing the end of their useful life. The system will automatically shut OFF when the battery voltage is too low to maintain proper operation of the unit.
- 3. Volume Indicator:** A series of green LED's that indicates the volume of the audible Doppler signal.
- 4. Volume Increase Switch:** A push-button switch that when depressed and held will increase the volume of the audible Doppler signal.
- 5. Volume Decrease Switch:** A push-button switch that when depressed and held will decrease the volume of the audible Doppler signal.
- 6. Channel Select Switch:** A push-button switch that when depressed changes the active channel between A and B. An amber LED indicates the active channel.



The Transceiver should be kept outside the sterile field.

The Doppler cable's plug, which is connected to every Doppler Carotid Shunt, is passed outside the sterile field. Typically, the wire is pinched to the table drape with a hemostat to ensure continued observances of standard sterile practices.

The above image is the plug at the end of the wire connected to the Doppler Shunts. This plug is pressed into the Transceiver.

After the Doppler Shunt is within the sterile field, it is possible to *test the Doppler before the Doppler Shunt is handed to the Surgeon. (handling during transportation may or may not effect the functionality of the Doppler)

The Transceiver has 2 connection ports, which are identical in function. They are labeled "A" & "B." These channels provide the sound from the Doppler Shunt or Doppler Probe that is connected to it. Pressing the "A" or "B" will select/activate the channel port. A channel port is active by default upon powering on the Transceiver. Plugging in the Doppler wire does not require twisting. A simple push will do fine.

Troubleshooting considerations (A-D): when there is no sound, check the following:

- A) **POWER/Batteries** - be sure that the batteries are installed in the properly indicated directions. (8 AA batteries) A black knob unscrews and reveals the sliding battery panel underneath. You will know that the Transceiver is powered on due to the lights associated with Volume and Channel being lit up.
- B) **Low Battery** - the light below the battery image on top of the Transceiver signals a low battery. This light will flash when the battery power is low. If the light starts flashing after the Carotid Endarterectomy has begun, then the speaker unit will likely have enough power to last through the time needed to complete the shunt's purpose.
- C) **Channels** - be sure that the Doppler Shunt cable is plugged into the active channel ("A" or "B").
- D) **Breaks** -the white wire is attached to the Doppler Shunt and should not be pulled with any force that would break and nullify the purpose and reliability of the Doppler function. Excessive tension will cause the Doppler to break from the white wire, possibly resulting in an exposed wire and a broken Doppler Shunt.

*In order to Test the Doppler within the sterile field before it's usage by the Surgeon:

- 1) Plug the Doppler wire into the Transceiver while maintaining the standard Sterility practices.
 - 2) Use a syringe to apply saline inside the Shunt in a few short bursts. As the saline passes the Doppler Crystal, it will produce a "rushing liquid" sound.
- Alternatively: tap near the Doppler Crystal with a finger or tool, which results in a thumping sound.