Antenna Information

The 608-614 MHz transmitter uses two antennas:

a) Compact ceramic antenna, type VJ 3505, manufactured by Vishay Vitramon.
This has an omnidirectional / dipole equivalent pattern with a peak gain of -4.2 dBi in the transmitter frequency range. This is the manufacturer's typical value with an appropriate matching network and the recommended groundplane.
This antenna is permanently installed as part of the transmitter PCB assembly.

b) ECG Lead-wire antenna, lead-wire type Spacelabs 013-1004-21.
This is a 610 mm long ECG lead-wire of ordinary design, making a connection between the transmitter and an adhesive electrode on the patient. The connection to the transmitter is a plug conforming to DIN 42802 for touch-proof medical connectors. Held straight and driven from the (relatively small) ground plane of the transmitter, a 610 mm lead-wire can be expected to show a peak gain of around 4 dBi.

Signal power is split asymmetrically between the two antennas to approximately compensate the difference in gain; schematic 676-0912-00 shows the circuitry.

The two antennas are intended to provide diversity in respect of patient movement and posture. The ceramic antenna can be blocked by the patient's limbs in some postures. The lead-wire has unpredictable pattern and losses but is less subject to blocking.

FCC Rules § 15.203 Antenna requirement:
The internal antenna is permanently attached.
The lead-wire can be replaced by the user in accordance with the User Manual, but no alternative antennas are available with this type of connector. Alternative ECG lead-wires will have similar radiating characteristics.