RF Cutter Recognition Description

The TPS console has internally a main control board assembly. A micro controller on this pc board, the Main controller, identifies handpieces as they are plugged into the handpiece ports. After reading the data from the handpiece, it determines if the handpiece supports RF cutter recognition. If so, it then communicates to another micro controller, the RFID controller, which directly interfaces to the RF transceiver IC. The RFID controller constantly scans the handpieces that support cutter recognition, searching for an RF tag. The Main controller polls the RFID controller, and if a tag is present in the RF field it is then read. The Main controller commands the RFID controller to read the contents of the EEPROM on the tag, then relays that data back to the Main controller. The Main controller then sets the console settings relative to the data in the tag.

The RF transceiver IC is intended to drive a 50ohm antenna, which is routed off the board to the handpiece connectors through a relay. When no handpiece is connected, or a handpiece that does not support cutter recognition is connected, the relays are opened. The cable of the handpiece has a 50ohm coaxial conductor, which then terminates to a flex circuit in the handpiece. This flex circuit ties into the actual antennae, which is in the handpiece. The RF tags are external to the handpiece, and are contained in the shaver blades. When a shaver blade is inserted into the handpiece, the tag from the blade is positioned into the antennae in the handpiece. This mechanically aligns the console transceiver with the RF tag.