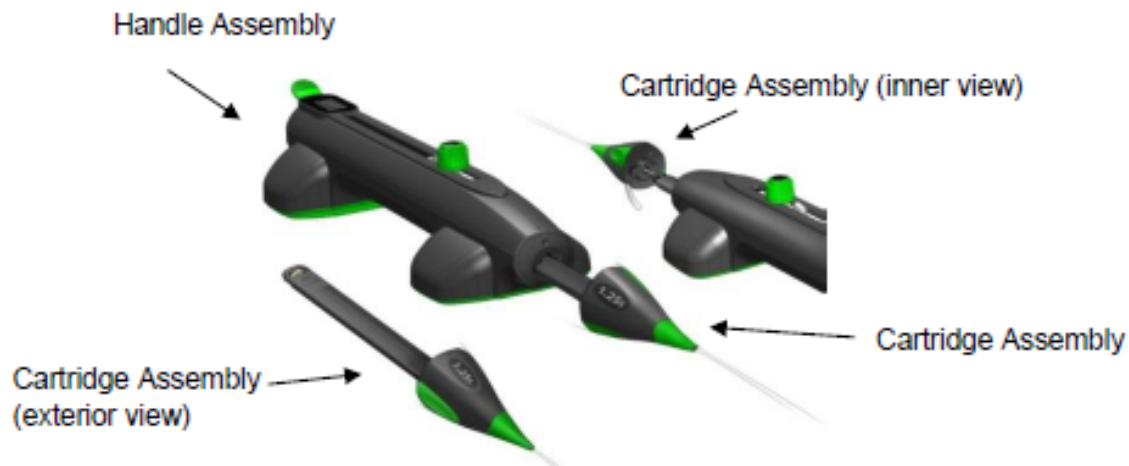# 7-10030 Operational Description.

The DIAMONDBACK 360 Peripheral OAS is designed to remove or reduce occlusive material and restore luminal patency by using an orbiting, diamond-coated, eccentrically mounted crown.

The Exchangeable Platform

OAD Handle and Exchangeable Cartridges

The Exchangeable Orbital Atherectomy Device is an enhancement of the legacy Diamondback 360 Peripheral Orbital Atherectomy Device, with the new design enabling separation of the cartridge assembly (including the shaft and crown) from the handle. This allows for multiple cartridges to be used with the same handle on the same patient which cost effectively addresses the situation where multiple crown sizes are required for treatment of a single patient.

 "Exchangeability" is enabled by:
- The cartridge and handle assemblies use Radio Frequency Identification (RFID) to communicate the operational parameters for each unique cartridge. Operational parameters include spin speed, spin direction, current limits, etc.
- In order to implement RFID capability, an RFID reader has been added to the OAD handle and an RFID tag resides in each cartridge. They are designed to be as close together as possible (approximately 1 cm) so that the handle communicates with only the intended cartridge.

For more details, see Instructions For Use (92-10015-01).

Radio Information

RFID Reader board

      ST Microelectronics PN: CR95HF-VMD5T
         SPI Mode: Slave, 500kbps.
            Host processor off-board.
         External Crystal: 27.12MHz ± 30PPM.
         13.56 MHz fundamental.
         10% Carrier Modulation Index.
         55mW maximum output power transmitter, operated at 3V. To further reduce output power, our design disconnects one of the transmit pins.
         ISO/IEC 15693 Protocol.
         Data rate: 26.48 Kbps
         Single subcarrier.
         ASK (Amplitude Shift Keying).
         7% typical duty cycle - 24.3% maximum transmit time.
         Tag polling (from RFID reader) is every 500mS.

      Transmitting data only (not audio or video).

      Output power not variable.
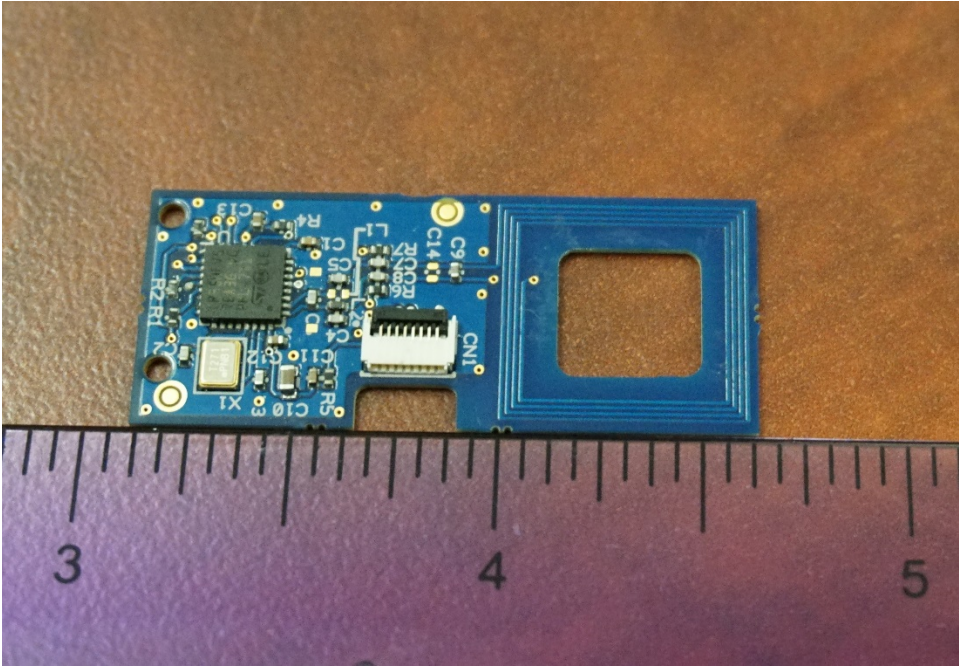

RFID Tag board

      ST Microelectronics PN: M24LR04E-RMC6T/2
        NFC/RFID tag IC with 4-Kbit EEPROM.
        ISO 15693 interface.

RFID Reader Board (6-10032)

RFID Tag Board (6-10028)