

Theory of Operation and Tune up Procedure

The Brady Daughter Card (BDC) is located in the base of the printer. The BDC utilizes the Texas Instrument TI-R6C-001A-01 multi-protocol 13.56 MHz RFID transceiver. Connected to the BDC are three antennas using 50-ohm RG 174 coax. The antennas are capacitor/ inductor/ resistor type tuned to 13.56 MHz and matched to 50-ohms using shunt and series capacitors in the on-board matching network.

The first internal connection at the BDC is to the ribbon antenna. The ribbon antenna detects the presence of ribbon installed in the printer via an RFID transponder tag attached to the ribbon core. The next two internal connections are for the two media antennas configured in an “X” pattern inside the media holder. This is so no matter where the transponder tag is positioned as the media rotates about the media holder, the transponder tag will always be in the field of one of the media antennas. The BDC processor switches between the three antennas using two RF switches. Spurious emissions are controlled by a low pass filter at the output of the transceiver and various ferrites located on the BDC and coaxial cables.

The processor and transceiver on-board the BDC sends and receives media type, color, length remaining, and other ribbon and media properties between the transponders and printer. The transponders are located on the cores of label and ribbon material. The information sent and received is used by the printer internally for setup and also provides information to the user via the printer front panel and label-creation software on the user’s personal computer attached to the printer.

There are no user adjustments or tune-up procedures. There are no external antenna connections – all antennas are internal to the printer and media holder. The printer is for commercial and light-industrial use – not intended for use in the home.