JETTRFID-1356 OPERATIONAL DESCRIPTION

The **JETT® RFID** attachment uses the **SkyeTek SkyeRead M1** 13.56 MHz Reader / Writer RFID (Radio Frequency Identification) module to read and write to industry standard 13.56 MHz RFID tags. The M1 is based upon the **Texas Instruments S6700 Multi-Protocol RF Transceiver IC, Part Number: RI-R6C-001A**. The design output power is 200 mW into a 50 ohm load when supplied with 5 VDC.

When 5V is applied to the JETT® RFID attachment and the appropriate action commands are issued to it through its RS-232 serial interface (from the JETT® CPU), a 13.56 MHz sinusoidal magnetic carrier wave is radiated from the attachment's antenna predominately in both the forward and backward directions, which are perpendicular to the antenna's flat side. At a distance of up to six (6) inches from the antenna panel, a standard size 13.56 MHz RFID tag will intercept some of this magnetic energy through its onboard antenna (inductive coupling), much like the secondary winding in a transformer, and use it, after conditioning, to supply power to the tag's electronic circuitry. The 13.56 MHz sine wave provides the clock for any necessary digital processing to the tag circuits.

Using tag identification data or other stored data in an embedded IC, the tag then transmits the data back to the JETT® RFID reader using load modulation (an antenna load resistor is switched on and off at a frequency less than the carrier), which creates two subcarriers frequencies just above and below the 13.56 MHz carrier. One of these subcarriers is then modulated using the well known ASK (Amplitude Shift Keying) method. The JETT® RFID reader then filters out everything except one of the subcarriers. That subcarrier is then amplified and demodulated to recover the tag's transmitted data.

The JETT® RFID reader transmits data to the tag using the ASK method through its 13.56 MHz carrier wave.

Additional discussion: see the attached Texas Instruments file: S6700v02 june02.pdf.

TEXAS INSTRUMENTS S6700 SPECIFICATION SHEET (USED ON SKYETEK M1
MODULE) AND DESIGNERS GUIDE.

TIS6700DATASHEET
pdf

TI S6700 SPEC. SHEET

TIS6700DESIGNGUI
E.pdf

TI S6700 DESIGNERS GUIDE

"SkyeTek SkyeRead
M1 Reference Guide.