BARNES INTERNATIONAL

## Smart Card Communication Monitor

SPY 3000

Validates EMV, GSM and 3G compliance by testing the interoperability between the chip card and any chip card accepting device (ATM, mobile, POS Terminal)

The SPY 3000 ensures that EMV cards function perfectly in the field by monitoring the communication between the smart card acceptance device or terminal and the contact chip card. The tool works by tapping into and viewing the communication between the two devices without any interference.

The SPY 3000 is an excellent tool for debugging interoperability issues between the card and terminal during development and out in the field. It is designed for EMV cards and devices, GSM, 3G and baseline ISO7816/3/4 applications.
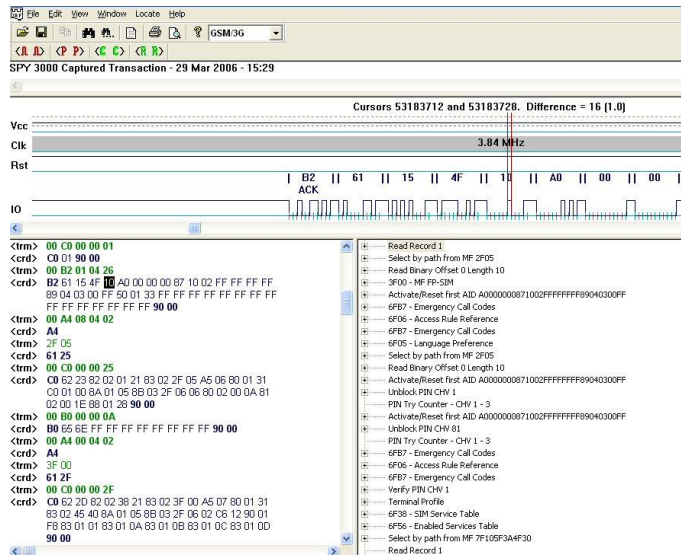
Solution Highlights

☐ **Powerful**: The SPY 3000 is a fast, accurate and reliable test tool for validating chip card and device interoperability.

☐ **Flexible**: Users can test to EMV, GSM and 3G standards, and develop customer application interpretation scripts to suit their own requirements.

☐ **Portable**: Compact and lightweight, the SPY 3000 can be used in the laboratory, office or out in the field.

Diagnostic Capabilities

The SPY 3000 user display comprises three concurrent main views of the card/terminal interaction process. The views dynamically spy on the card/terminal interaction in real time as the test proceeds. These views are linked interactively so that if the user highlights a specific command or sequence in one view then the other views automatically synchronise at the same data position.

Logic Analyser

Graphical representation of the logic level of each of the signal lines, Vcc, reset, clock and I/O. Horizontal and vertical (zoom control) scroll bars, colour coding on I/O line to indicate the transmitter (card or terminal), two adjustable cursors measure time difference (accurate to one clock cycle) and link to the other views.

Byte Level Communication Log

Textual Communications Log using colour coding to highlight data source (card or terminal), protocol bytes, errors in data, parity errors and character repetition requests.

Interpreted Application Tree

Application level data in tree-structured format controlled by a TCL (Tool Control Language) script. EMV and GSM/3G scripts are provided as standard. Interpretation scripts for other applications may be easily developed in TCL by the user or may be requested from Barnes.

Application Scripts

The interpreted view is controlled by application specific scripts written in TCL which may be selected manually or automatically. Application scripts are provided for both EMV and GSM with SPY 3000 where the data exchange is reported and checked against application specifications and rules. Interpretation scripts for other applications may be easily developed using SPY 3000 or may be requested from Barnes.

A comprehensive range of functions are provided including data save, retrieval, search, reporting and printing.

Technical Specifications

- Protocols: Supports T=0 and T=1
- Clock Speeds: 500KHz to 10MHz
- Event timings are accurate to 1 clock cycle, timings are reported in terminal clock cycles and etu's.
- Full translation of ATR, PTS, APDU commands and responses, status and procedure bytes etc.
- Auto PTS speed setup
- Speed support >300KBaud; 16 clock cycles/etu

- Clock speed and clock stop analysis
- Signals Monitored: Vcc (nominally 5v, 3v, 1.8v or Off), Reset State (High or Low), Clock State (High, Low or Running), I/O State (High or Low), I/O current direction.
- Logic transitions on Reset and I/O are time stamped
- OS: Vista, Windows XP, Windows 7
- Interface**:** USB