UL Mobile Spy

Overview

UL Mobile Spy plays an essential role for anyone in the mobile industry who needs to analyze the communication between mobile handsets and SIM/USIM cards or between M2M and Consumer RSP devices and eUICC.
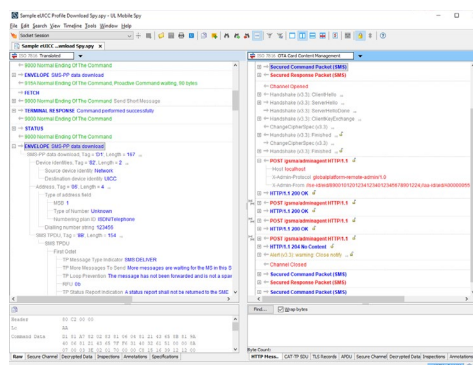
Benefits

UL Mobile Spy serves as an easy-to-use tool that translates and visualizes communication between handsets and SIM/USIM cards, or contactless readers, M2M and Consumer devices and eUICCs. It is a flexible and intuitive tool, providing the most complete translation available in the market today. The various views in UL Mobile Spy make troubleshooting fast and easy. Its built-in inspections automatically help pinpoint problems.

Features

UL Mobile Spy supports and translates ISO, GSM, 3G-5G, CDMA, RFM/RAM over CAT_TP and SMS, HTTPS, SWP/HCI, Contactless/NFC, MIFARE, GSMA eUICC and GlobalPlatform standards.

The core tool provides a basic ISO 7816 command translator decoding the T=0 and T=1 protocols over the ISO 7816 interface. It also includes several basic searches and a number of powerful core features such as translations, searches, filters, inspections and timelines.

The translation modules each add several new searches, filters and inspections for a specific protocol when included in UL Mobile Spy.

Key benefits

- Support for eUICC via dynamic decryption of active secure channels such as SCP03, SCP80 and SCP81
- Translation of 3GPP Release 17, including 5G updates for TLVs, Envelopes, Proactive commands and file system
- Evaluate interoperability between handset vs. SIM or eSIM
- Assure quality through error detection
- View clear, understandable communication between devices
- Translate SAT/USAT in GSM, 3G-5G and CDMA2000 modules
- Advanced high-level translation (including toolkit, BIP, OTA RFM/RAM & Contact/Contactless Payments)
- Synchronized spying on SWP and contactless interfaces
- Ability to share logs with other interested parties using UL Mobile Log Viewer at no additional cost
- Spy on removable and non-removable MFF2
- Spy on UL Test Tools testing cards without needing proprietary UL hardware

UL Solutions

Specifications

Translation modules and standards supported

- **UL Mobile Spy Core**
  ISO 7816 translation of the T=0 and T=1 protocols.
- **GSM**
  Translation of GSM session commands, files, SAT (SIM Application Toolkit) commands and the Bearer Independent Protocol (BIP) channel.
- **3G-5G**
  Translation of 3G-5G (W-CDMA) USIM and ISIM commands, files, BIP and GlobalPlatform Secure Element Access Control (ARA-M and PKCS#15).
- **CDMA**
  Translation of CDMA2000 commands, files and CDMA Card Application Toolkit (CCAT).
- **Contactless/NFC**
  Translation of contactless sessions against ISO 14443 (including APDUs sent over the contactless interface).
- **GSMA eSIM**
  Decryption and translation of SMS SCP80 and TLS SCP81 in M2M sessions on ES5, ES8 and ES6 plus translation of ASN.1 formatted function requests and responses in Consumer sessions on ES10x, ES6 and ES8+.
- **Card Management**
  Translation of GlobalPlatform commands, OTA RFM/RAM over CAT_TP and SMS, Secured Command Packets (ETSI 102 225 and 3GPP 31.115), RAM Over HTTP (GlobalPlatform Amd. B) including Remote APDU structures (ETSI 102 226 and 3GPP 31.116), SCP02, SCP03 (GlobalPlatform Amd. D) and GSMA's eUICC and related security protocols.
- **SWP**
  Translation of SWP communication, views for LLC and HCI layers, decoding S1 and S2 signals, HCI pipes in the timeline view.
- **Mobile Payment**
  Translation of mobile Visa payWave, MasterCard PayPass, American Express ExpressPay and Discover Contactless D-PAS applications for APDUs sent over the ISO 7816, contactless or SWP interfaces.
- **MIFARE**
  Translation of MIFARE Classic and MIFARE DESFire based messages on both contactless and SWP interfaces; with the appropriate keys, you can decrypt MIFARE messages to view tag memory.
- **Customized translations**
 Support for customized translations for proprietary applications or proprietary protocols.

Advanced features

- **Search and find**
  A powerful search facility for text, element type, commands, status word types, time intervals, channels and pipes.
- **Filters**
  Translate the information on the interface using tailored views and filters to ensure that users can view the data most relevant to them.
- **Timeline**
  Simultaneous views of different logical interfaces and data views; the timeline view shows all events and activities from the communication as they occur — essential for understanding synchronous communications allowing fast session navigation.
- **Inspections**
  Add value to the session by inspecting for common issues and highlighting them; you can save comments with data elements to speed up problem solving and improve information sharing.
- **View exports**
  Share session information from UL Mobile Spy with other parties to help identify, debug and fix issues. Do this by exporting session data to HTML or using UL Mobile Log Viewer.
- **UL Mobile Log Viewer**
  View test certificates and spy logs for people who do not have any UL test tools at no additional cost.

Hardware

Depending on your choice of hardware:
- UL SmartConnect (contact spying for 3G-5G/GSM and contactless)
- UL SmartWave Box (contactless spying)
- National Instruments Corporation (NI) MP300 ACL1 and Digital Antenna (contactless spying)
- NI MP300 SC2 ISO and SWP SPY (contact spying for 3G-5G/GSM and SWP/HCI)

UL SmartConnect

PC
+
UL Mobile Spy Software

Handset (SUT)

(U)SIM Card(SUT)

UL Mobile Spy with UL SmartConnect
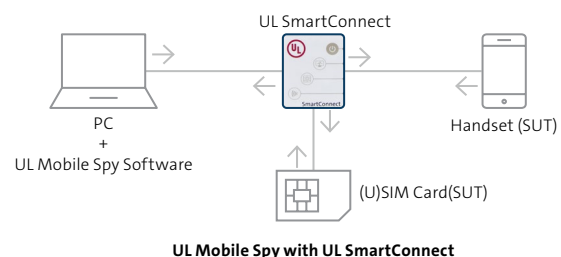
For more information, visit UL.com/MS.

Solutions

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