XRY/XACT v6.10.1

Test Results for Mobile Device Acquisition Tool

September 26, 2014

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Introduction

The Computer Forensics Tool Testing (CFTT) program is a joint project of the Department of Homeland Security (DHS), the National Institute of Justice (NIJ), and the National Institute of Standards and Technology Law Enforcement Standards Office (OLES) and Information Technology Laboratory (ITL). CFTT is supported by other organizations, including the Federal Bureau of Investigation, the U.S. Department of Defense Cyber Crime Center, U.S. Internal Revenue Service Criminal Investigation Division Electronic Crimes Program, and the U.S. Department of Homeland Security's Bureau of Immigration and Customs Enforcement, U.S. Customs and Border Protection and U.S. Secret Service. The objective of the CFTT program is to provide measurable assurance to practitioners, researchers, and other applicable users that the tools used in computer forensics investigations provide accurate results. Accomplishing this requires the development of specifications and test methods for computer forensics tools and subsequent testing of specific tools against those specifications.

Test results provide the information necessary for developers to improve tools, users to make informed choices, and the legal community and others to understand the tools' capabilities. The CFTT approach to testing computer forensics tools is based on well-recognized methodologies for conformance and quality testing. Interested parties in the computer forensics community can review and comment on the specifications and test methods posted on the CFTT Web site (http://www.cftt.nist.gov/).

This document reports the results from testing XRY/XACT v6.10.1 across supported Android and iOS devices and a feature phone. The images captured from the test runs are available at the CFREDS Web site (http://www.cfreds.nist.gov).

Test results from other tools can be found on the DHS S&T-sponsored digital forensics web page, http://www.cyberfetch.org/.

How to Read This Report

This report is divided into four sections. Section 1 identifies and provides a summary of any significant anomalies observed in the test runs. This section is sufficient for most readers to assess the suitability of the tool for the intended use. Section 2 identifies the mobile devices used for testing. Section 3 lists testing environment, the internal memory and Universal Integrated Circuit Cards (UICC) data objects used to populate the mobile devices and associated media. Section 4 provides an overview of the test case results reported by the tool. The full test data is available at http://www.cftt.nist.gov/mobile_devices.htm.

Test Results for Mobile Device Acquisition Tool

Tool Tested: XRY/XACT
Software Version: v6.10.1

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1 Results Summary

XRY/XACT is designed for perform a secure forensic extraction of data from a wide variety of mobile devices, such as smartphones, GPS navigation units, 3G modems, portable music players and the latest tablet processors.

The tool was tested for its ability to acquire active and deleted data from the internal memory of supported mobile devices and UICCs. Except for the following anomalies, the tool acquired all supported data objects completely and accurately for all mobile devices tested.

***Presentation*:**
- Readability and completeness of Personal Information Management (PIM) data (i.e., graphic files associated with address book entries, non-Latin address book entries) were not reported. (Devices: *Galaxy S3, Galaxy S4, Galaxy S5, Galaxy Note3, HTC One, Nexus4, Samsung Rugby 3*)

***Equipment / Subscriber related data*:**
- Subscriber related data (i.e., MSISDN) were not reported. (Devices: *Galaxy S3, Galaxy S4, Galaxy S5, Galaxy Note3, HTC One, Nexus4*)
- The MEID was not reported (Device: *iPad Air, iPad Mini*)

***Personal Information Management (PIM) data*:**
- Memo entries were not reported. (Devices: *Galaxy S3, Galaxy S4, Galaxy S5, Galaxy Note3, HTC One, Nexus4*)

***EMS messages*:**
- Text messages containing more than 160 characters were not reported. (Device: *Samsung Rugby 3*)

***MMS messages*:**
- Incoming and outgoing audio and picture messages were not reported. (Device: *Samsung Galaxy Note3*)

***Non-Latin Character Presentation*:**
- Address book entries containing non-Latin characters were not reported in the generated report. (Devices: *Galaxy S3, Galaxy S4, Galaxy S5, Galaxy Note3, HTC One, Nexus4, Samsung Rugby 3*)

***Physical Acquisition*:**
- Acquisitions of recoverable deleted data remnants (i.e., graphic, audio, video files) were not recovered. (Device: *Galaxy S3, Galaxy S4*)

For more test result details see section 4.

2 Mobile Devices

The following table lists the mobile devices used for testing XRY/XACT.

Make	Model	OS	Firmware	Network
Apple iPhone	5	iOS 6.1.4 (10B350)	3.04.25	GSM
Apple iPhone	5s	iOS 7.1 (11D167)	2.18.02	CDMA
Apple iPad	iPad 2 - MD065LL/A	iOS 6.1.3 (10B329)	04.12.05	GSM
Apple iPad	iPad Air - ME999LL/A	iOS 7.1 (11D167)	2.18.02	CDMA
Apple iPad Mini	iPad Mini - ME030LL/A	iOS 6.1.3 (10B329)	3.04.25	GSM
Apple iPad Mini	iPad Mini - MF075LL/A	iOS 7.0.4 (11B554a)	1.03.01	CDMA
Samsung Galaxy S3	SGH-1747	Android 4.1.2	1747UCDMG2	GSM
Samsung Galaxy S4	SGH-M919	Android 4.2.2	M919UVUAMDL	GSM
Samsung Galaxy S5	SM-G900V	Android 4.2.2	G900V.05	CDMA
HTC One	HTCC6525LVW	Android 4.2.2	0.89.20.0222	GSM
HTC One	HTC One	Android 4.1.2	4A.17.3250.20_10.40.1150.04L	CDMA
Samsung Galaxy Note 3	SM-N900V	Android 4.3	N900V.07	CDMA
Nexus 4	Nexus 4	Android 4.3	JWR66Y	GSM
Samsung Rugby 3	SGH-A997	A997UCMG1	REV0.2	GSM

Table 1: Mobile Devices

3 Testing Environment

The tests were run in the NIST CFTT lab. This section describes the selected test execution environment, and the data objects populated onto the internal memory of mobile devices and UICCs.

3.1 Execution Environment

Micro Systemation XRY/XACT version 6.10.1 was installed on Windows 7 v6.1.7601.

3.2 Internal Memory Data Objects

Micro Systemation's XRY/XACT was measured by analyzing acquired data from the internal memory of pre-populated mobile devices. Table 2 defines the data objects and elements used for populating mobile devices provided the mobile device supports the data element.

Data Objects	Data Elements
Address Book Entries	
	Regular Length
	Maximum Length
	Special Character
	Blank Name
	Regular Length, email
	Regular Length, graphic
	Regular Length, Address
	Deleted Entry
	Non-ASCII Entry
PIM Data	
Datebook/Calendar	Regular Length
Memos	Maximum Length
	Deleted Entry
	Special Character
	Blank Entry
Call Logs	
	Incoming
	Outgoing
	Missed
	Incoming - Deleted
	Outgoing - Deleted
	Missed - Deleted
Text Messages	
	Incoming SMS - Read
	Incoming SMS - Unread
	Outgoing SMS
	Incoming EMS - Read
	Incoming EMS - Unread
	Outgoing EMS

Data Objects	Data Elements
	Incoming SMS - Deleted
	Outgoing SMS - Deleted
	Incoming EMS - Deleted
	Outgoing EMS - Deleted
	Non-ASCII SMS/EMS
MMS Messages	
	Incoming Audio
	Incoming Graphic
	Incoming Video
	Outgoing Audio
	Outgoing Graphic
	Outgoing Video
Application Data	
	Device Specific App Data
Stand-alone data files	
	Audio
	Graphic
	Video
	Audio - Deleted
	Graphic - Deleted
	Video - Deleted
Internet Data	
	Visited Sites
	Bookmarks
Location Data	
	GPS Coordinates
Social Media Data	
	Facebook
	Twitter
	LinkedIn

Table 2: Internal Memory Data Objects

3.3 UICC Data Objects

The table below (Table 3) provides an overview of the data elements populated on Universal Integrated Circuit Cards (UICCs).

Data Objects	Data Elements
Abbreviated Dialing Numbers (ADN)	
	Maximum Length
	Special Character
	Blank Name
	Non-ASCII Entry
	Regular Length - Deleted Number
Call Logs	
	Last Numbers Dialed (LND)
Text Messages	
	Incoming SMS - Read
	Incoming SMS - Unread
	Non-ASCII SMS
	Incoming SMS - Deleted
	Non-ASCII EMS
	Incoming EMS - Deleted

Table 3: UICC Data Objects

4 Test Results

This section provides the test cases results reported by the tool. Sections 4.1 – 4.3 identify the mobile device operating system type (e.g., Android, iOS) and the make and model of mobile devices used for testing Micro Systemation's XRY/XACT v6.10.1. Section 4.4 covers Universal Integrated Circuit Cards (UICCs).

The *Test Cases* column (internal memory acquisition/UICC) in sections 4.1 - 4.4 are comprised of two sub-columns that define a particular test category and individual sub-categories that are verified when acquiring the internal memory for supported mobile devices and UICCs within each test case. Each individual sub-category row results for each mobile device/UICC tested. The results are as follows:

As Expected: the mobile forensic application returned expected test results – the tool acquired and reported data from the mobile device/UICC successfully.

Partial: the mobile forensic application returned some of data from the mobile device/UICC.

Not As Expected: the mobile forensic application failed to return expected test results – the tool did not acquire or report supported data from the mobile device/UICC successfully.

NA: Not Applicable – the mobile forensic application is unable to perform the test or the tool does not provide support for the acquisition for a particular data element.

4.1 Android Mobile Devices

The internal memory contents for Android devices were acquired and analyzed with Micro Systemation's XRY/XACT v6.10.1.

All test cases pertaining to the acquisition of supported Android devices were successful with the exception of the following.

- Readability and completeness of PIM Data i.e. *graphic files associated with contact entries* are not reported in the html report for all Android devices.
- Readability and completeness of PIM Data i.e. *non-Latin contact entries* (i.e., Chinese) were not reported in their native format in the pdf report for all Android devices.
- Subscriber related data (i.e., MSISDN) were not reported for all Android devices.
- Memo entries were not reported for all Android devices.
- Bookmarks for visited Internet URLs were not reported for the Samsung Galaxy Note 3.
- Incoming and outgoing audio and picture (MMS) messages were not reported for the Samsung Galaxy Note 3.
- Deleted data remnants for graphic, audio and video files were not recovered when performing a physical acquisition for the Samsung Galaxy S3, Galaxy S4.

See Table 4 below for more details.

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Test Cases – Internal Memory Acquisition		*Mobile Device Platform: Android*						
		Galaxy S3 GSM	Galaxy S4 GSM	Galaxy S5 CDMA	Galaxy Note 3 CDMA	HTC One GSM	HTC One CDMA	Nexus 4 GSM
Connectivity	Non Disrupted	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Disrupted	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Reporting	Preview-Pane	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Generated Reports	*Partial*	*Partial*	*Partial*	*Partial*	*Partial*	*Partial*	*Partial*
Equipment/ User Data	IMEI	*As Expected*	*As Expected*	*NA*	*NA*	*As Expected*	*NA*	*As Expected*
	MEID/ESN	*NA*	*NA*	*As Expected*	*As Expected*	*NA*	*As Expected*	*NA*
	MSISDN	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*
PIM Data	Contacts	*Partial*	*Partial*	*Partial*	*Partial*	*Partial*	*Partial*	*Partial*
	Calendar	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	To-Do List/	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*

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Test Cases – Internal Memory Acquisition							
	Tasks							
	Memos	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*
Call Logs	Incoming	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Outgoing	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Missed	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
SMS Messages	Incoming	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Outgoing	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
MMS Messages	Graphic	*As Expected*	*As Expected*	*As Expected*	*Not As Expected*	*As Expected*	*As Expected*	*As Expected*
	Audio	*As Expected*	*As Expected*	*As Expected*	*Not As Expected*	*As Expected*	*As Expected*	*As Expected*
	Video	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Stand-alone Files	Graphic	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Audio	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Video	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Application Data	Documents	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Spreadsheets	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	Presentations	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
Internet Data	Bookmarks	*As Expected*	*As Expected*	*As Expected*	*Not As Expected*	*As Expected*	*As Expected*	*As Expected*
	History	*As Expected*	*As Expected*	*As Expected*	*Not As Expected*	*As Expected*	*As Expected*	*As Expected*
Social Media Data	Facebook	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Twitter	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	LinkedIn	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Acquisition	Acquire All	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Selected All	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	Select Individual	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*

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Test Cases – Internal Memory Acquisition		Mobile Device Platform: Android						
		Galaxy S3 GSM	*Galaxy S4 GSM*	*Galaxy S5 CDMA*	*Galaxy Note 3 CDMA*	*HTC One GSM*	*HTC One CDMA*	*Nexus 4 GSM*
Case File Data Protection	Modify Case Data	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Physical Acquisition	Readability	*As Expected*	*As Expected*	*NA*	*NA*	*NA*	*NA*	*NA*
	Deleted File Recovery	*Partial*	*Partial*	*NA*	*NA*	*NA*	*NA*	*NA*
Non-ASCII Character	Reported in native format	*Partial*	*Partial*	*Partial*	*Partial*	*Partial*	*Partial*	*Partial*
Hashing	Hashes reported for acquired data objects	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
GPS Data	Coordinates (Long/Lat)	*As Expected*	*NA*	*As Expected*	*As Expected*	*NA*	*NA*	*NA*

Table 4: Android Mobile Devices

4.2 iOS Mobile Devices

The internal memory contents for iOS devices were acquired and analyzed with Micro Systemation's XRY/XACT v6.10.1.

All test cases pertaining to the acquisition of supported iOS devices were successful with the exception of the following.

▪ MEID was not reported for the iPad Air (CDMA) and the iPadMini (CDMA).

See Table 5 below for more details.

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Test Cases – Internal Memory Acquisition		*Mobile Device Platform: iOS*					
		iPhone5 *GSM*	iPhone5S *CDMA*	iPad *GSM*	iPad Air *CDMA*	iPAD Mini *GSM*	iPad Mini *CDMA*
Connectivity	Non Disrupted	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Disrupted	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Reporting	Preview-Pane	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Generated Reports	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Equipment/ User Data	IMEI	*As Expected*	*NA*	*As Expected*	*NA*	*As Expected*	*NA*
	MEID/ESN	*NA*	*As Expected*	*NA*	*Not As Expected*	*NA*	*Not As Expected*
	MSISDN	*As Expected*	*As Expected*	*NA*	*NA*	*NA*	*NA*
PIM Data	Contacts	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Calendar	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	To-Do List/ Tasks	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	Memos	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Call Logs	Incoming	*As Expected*	*As Expected*	*NA*	*NA*	*NA*	*NA*
	Outgoing	*As Expected*	*As Expected*	*NA*	*NA*	*NA*	*NA*
	Missed	*As Expected*	*As Expected*	*NA*	*NA*	*NA*	*NA*
SMS Messages	Incoming	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Outgoing	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
MMS Messages	Graphic	*As Expected*	*Not As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Audio	*As Expected*	*Not As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Video	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Stand-alone Files	Graphic	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Audio	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Video	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*

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Test Cases – Internal Memory Acquisition		*Mobile Device Platform: iOS*					
		iPhone5 GSM	iPhone5S CDMA	iPad GSM	iPad Air CDMA	iPAD Mini GSM	iPad Mini CDMA
Application Data	Documents	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Spreadsheets	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	Presentations	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
Internet Data	Bookmarks	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	History	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Social Media Data	Facebook	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Twitter	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	LinkedIn	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Acquisition	Acquire All	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Selected All	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	Select Individual	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
Case File Data Protection	Modify Case Data	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Physical Acquisition	Readability	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	Deleted File Recovery	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
Non-ASCII Character	Reported in native format	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Hashing	Hashes reported for acquired data objects	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
GPS Data	Coordinates (Long/Lat)	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*

Table 5: iOS Mobile Devices

4.3 Feature Phones

The internal memory contents for the feature phone was acquired and analyzed with Micro Systemation's XRY/XACT v6.10.1.

All test cases pertaining to the acquisition of the Samsung Rugby III were successful with the exception of the following.

- *Non-Latin contact entries* (i.e., Chinese) were not reported.
- EMS messages (messages over 160 characters) were not reported.

See Table 6 below for more details.

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Test Cases – Internal Memory Acquisition		*Mobile Device Platforms: Feature Devices*
		Samsung Rugy 3 *GSM*
Connectivity	Non Disrupted	*As Expected*
	Disrupted	*As Expected*
Reporting	Preview-Pane	*As Expected*
	Generated Reports	*As Expected*
Equipment/ User Data	IMEI	*As Expected*
	MEID/ESN	*NA*
	MSISDN	*As Expected*
PIM Data	Contacts	*Partial*
	Calendar	*As Expected*
	To-Do List/ Tasks	*NA*
	Memos	*As Expected*
Call Logs	Incoming	*NA*
	Outgoing	*NA*
	Missed	*NA*
SMS Messages	Incoming	*Partial*
	Outgoing	*Partial*
MMS	Graphic	*As Expected*

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Test Cases – Internal Memory Acquisition		*Mobile Device Platforms: Feature Devices*
		Samsung Rugy 3 *GSM*
Messages	Audio	*As Expected*
	Video	*As Expected*
Stand-alone Files	Graphic	*As Expected*
	Audio	*As Expected*
	Video	*As Expected*
Application Data	Documents	*NA*
	Spreadsheets	*NA*
	Presentations	*NA*
Internet Data	Bookmarks	*NA*
	History	*NA*
Social Media Data	Facebook	*NA*
	Twitter	*NA*
	LinkedIn	*NA*
Acquisition	Acquire All	*As Expected*
	Selected All	*NA*
	Select Individual	*NA*
Case File Data Protection	Modify Case Data	*As Expected*
Physical Acquisition	Readability	*NA*
	Deleted File Recovery	*NA*
Non-ASCII Character	Reported in native format	*Not As Expected*
Hashing	Hashes reported for acquired data objects	*As Expected*
GPS Data	Coordinates (Long/Lat)	*NA*

Table 6: Feature Phones

4.4 Universal Integrated Circuit Cards (UICCs)

The internal memory contents for Universal Integrated Circuit Cards (UICCs) were acquired and analyzed with Micro Systemation's XRY/XACT v6.10.1.
All test cases pertaining to the acquisition of UICCs were successful.

See Table 7 below for more details.

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Test Cases – UICC Acquisition		*Universal Integrated Circuit Card*
Connectivity	Non Disrupted	*As Expected*
	Disrupted	*As Expected*
Equipment/ User Data	Service Provider Name (SPN)	*As Expected*
	ICCID	*As Expected*
	IMSI	*As Expected*
	MSISDN	*As Expected*
PIM Data	Abbreviated Dialing Numbers (ADNs)	*As Expected*
	Last Numbers Dialed (LNDs)	*As Expected*
	SMS Messages	*As Expected*
	EMS Messages	*As Expected*
Location Related Data	LOCI	*As Expected*
	GPRSLOCI	*As Expected*
Acquisition	Acquire All	*As Expected*
	Selected All	*As Expected*
	Select Individual	*As Expected*
Case File Data Protection	Modify Case Data	*As Expected*
Password Protected SIM Acquire	Acquisition of Protected SIM	*As Expected*
PIN/PUK Attempts	PIN attempts reported	*As Expected*
	PUK attempts reported	*As Expected*
Non-ASCII Character	Non-ASCII characters	*As Expected*
Hashing	Hashes reported for acquired data objects	*As Expected*

Table 7: Universal Integrated Circuit Cards