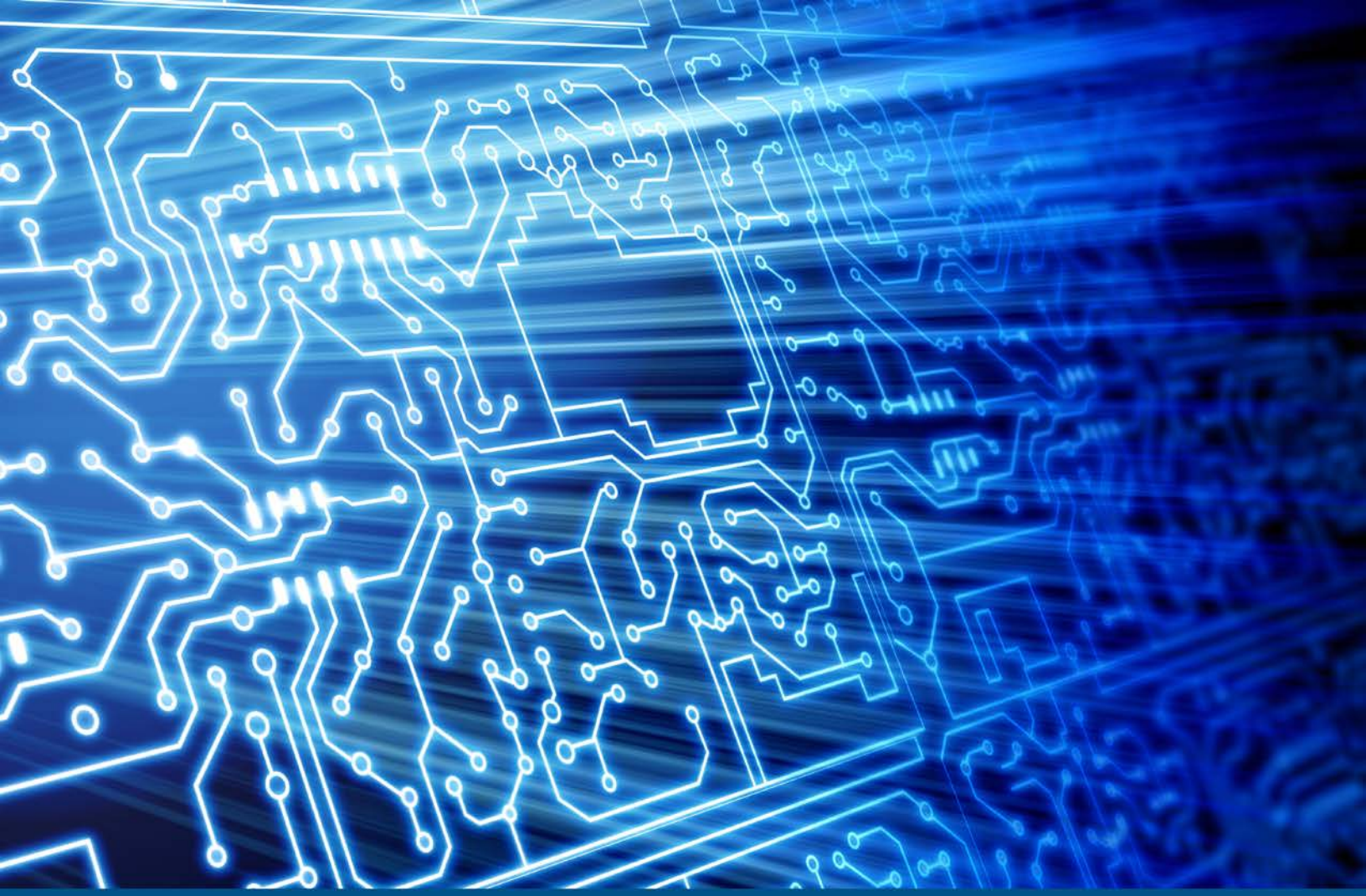

Mobile Phone Examiner Plus v5.6.0

Test Results for Mobile Device Acquisition Tool

March 7, 2017

Homeland Security

Science and Technology

This report was prepared for the Department of Homeland Security Science and Technology Directorate Cyber Security Division by the Office of Law Enforcement Standards of the National Institute of Standards and Technology.

For additional information about the Cyber Security Division and ongoing projects, please visit http://www.dhs.gov/science-and-technology/cyber-security-division.

December 2016

Test Results for Mobile Device Acquisition Tool:
Mobile Phone Examiner Plus (MPE+) v5.6.0

Contents

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 Special Program Office (SPO) 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 MPE+ v5.6.0 across supported mobile devices e.g., smart phones, and feature phones.

Test results from other tools can be found on the DHS S&T-sponsored digital forensics web page, http://www.dhs.gov/science-and-technology/nist-cftt-reports.

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 data objects used to populate the mobile devices. 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:	Mobile Phone Examiner Plus (MPE+)
Software Version:	v5.6.0
Supplier:	Access Data
Address:	588 West 400 South Suite 350 Lindon, UT 84042
Tel:	(800) 658-5199
WWW:	http://www.accessdata.com

1 Results Summary

Mobile Phone Examiner Plus (MPE+) is a stand-alone mobile device investigation solution that includes enhanced smart device acquisition and analysis capabilities. MPE+ provides examiners with the ability to collect, identify and obtain the key data other solutions miss.

MPE+ was tested for its ability to acquire active data from the internal memory of supported mobile devices and associated media (i.e., smart phones, tablets, UICCs/SIMs). Except for the following anomalies, the tool acquired all supported data objects completely and accurately for all mobile devices tested.

Connectivity:

- Connectivity was not established. (Devices: *LG G4, HTC Win 8x, Nokia Lumia 735, BlackBerry Q10, BlackBerry Z30*)
- Disrupting connectivity during data extraction did not produce an error message. (Devices: *Android*)

Subscriber / Equipment related data:

- MSISDNs were not reported. (Devices: *iOS*)

***Personal Information Management (PIM) data*:**

- Metadata (i.e., graphics, URLs) associated with Contact entries was not reported. (Devices: *Android*)
- Calendar entries and Memos were not reported. (Devices: *Android*)
- Long memo entries are truncated (Devices: *iOS*)
- Call log data was not reported. (Devices: *Galaxy Tab E, Galaxy Tab S2*)
- SMS and MMS messages were not reported. (Devices: *Ellipsis 8, Galaxy Tab E, Galaxy Tab S2*)
- MMS attachments (audio, video, graphic) were not viewable within the preview-pane. (Devices: *Motorola Droid Turbo 2, Galaxy S6, Galaxy S6 Edge Plus*)
- Audio, video and graphic files were not viewable/playable with the internal viewer. (Device: *Ellipsis 8*)

Application Data:

- Application related data (i.e., txt, pdf files) was not acquired. (Devices: *Android, iOS*)

Social media Data:

- Social media (Facebook, Twitter, LinkedIn, Instagram) related data was not reported. (Devices: *Android*)
- Partial social media (Twitter) related data was reported. (Devices: *iOS*)
- Social media related data (Facebook, Instagram) was not reported. (Devices: *iOS*)

Internet Related Data:

- Bookmarks, Internet History, and email related data was not reported. (Devices: *Galaxy S6, Galaxy Tab-E*)
- Internet History or email related data was not reported. (Devices: *Galaxy S6 Edge Plus, Ellipsis 8, Galaxy Tab S2*)
- Email related data was not reported. (Devices: *Motorola Droid Turbo 2, iOS*)

GPS:

- GPS related data (i.e., longitude, latitude coordinates) was not reported. (Devices: *Android*)

UICCs:

- Connectivity was not established. (Media: *UICCs*)

NOTES:

- The parsed data extracted from supported devices should be reported within the preview-pane under an associated category i.e., audio, video, graphics, web history, GPS, Notes; eliminating traversing the filesystem (each individual folder) manually.

For more test result details see section 4.

2 Mobile Devices

The following table lists the mobile devices used for testing MPE+ v5.6.0.

Make	Model	OS	Firmware	Network
Apple iPhone	6	iOS 9.2.1 (13C75)	4.52.00	CDMA
Apple iPhone	6S	iOS 9.2.1 (13C75)	1.23.00	CDMA
Apple iPhone	6S Plus	iOS 9.2.1 (13C75)	1.23.00	CDMA
Apple iPad	Mini	iOS 9.2.1 (13B143)	4.32.00	CDMA
Apple iPad	Pro	iOS 9.2.1 (13C75)	4.52.00	CDMA
Motorola Droid	Turbo2	Android 5.1.1	LCK23.130-23	CDMA
Samsung Galaxy	S6	Android 5.1.1	LMY47.G920VVRU4BOK7	CDMA
Samsung Galaxy	S6 Edge Plus	Android 5.1.1	LMY47X.G928VVRU2AOJ2	CDMA
LG	G4	Android 5.1.1	LMY47D	CDMA
Ellipsis	8	Android 4.4.2	QZ3_PE3X	CDMA
Samsung Galaxy	Tab E	Android 5.1.1	LMY47X.T567VVRU1AOH1	CDMA
Samsung Galaxy	Tab S2	Android 5.1.1	LMY47X.T817BVRU2AOJ2	CDMA
HTC Win 8x	HTC PM23300	Win 8.0	3030.0.34101.502	GSM
Nokia Lumia	735	Win 8.0	02171.00002.15194.03079	CDMA
Blackberry Q10	STL100-4	10 OS - 10.2.1.2122	672849	CDMA
Blackberry Z30	STA100-3	10 OS - 10.3.2.858	85718	CDMA

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.

3.1 Execution Environment

MPE+ v5.6.0 was installed on Windows 7 v6.1.7601.

3.2 Internal Memory Data Objects

MPE+ v5.6.0 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-Latin Entry
	Contact Groups
PIM Data: Datebook/Calendar; Memos	*Regular Length*
	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
	Incoming SMS – Deleted
	Outgoing SMS – Deleted
	Incoming EMS – Deleted
	Outgoing EMS – Deleted
	Non-Latin SMS/EMS
MMS Messages	*Incoming Audio*
	Incoming Graphic
	Incoming Video

Data Objects	Data Elements
	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
	E-mail
Location Data	*GPS Coordinates*
	Geo-tagged Data
Social Media Data	*Facebook*
	Twitter
	LinkedIn
	Instagram

Table 2: Internal Memory Data Objects

4 Test Results

This section provides the test cases results reported by the tool. Sections 4.1 – 4.4 identify the mobile device operating system type, media (e.g., Android, iOS, Windows Mobile, UICC) and the make and model of mobile devices used for testing MPE+ v5.6.0

The *Test Cases* column (internal memory acquisition) 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 MPE+ v5.6.0.

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

- Disrupting connectivity during data extraction did not produce an error message for the Motorola Droid Turbo 2, Galaxy S6, Galaxy S6 Edge Plus, Ellipsis 8, Galaxy Tab-E and the Galaxy Tab S2.
- Connectivity was not established to the LG G4 – the following error was produced, Connectivity Error: There is no device attached or the attached device is not in USB Debugging mode. Please correct and try again. NOTE: the device was put in USB debugging mode and Windows successfully recognized the device.
- Contact entries do not include associated metadata i.e., graphic files, URLs for the Motorola Droid Turbo 2, Galaxy S6, Galaxy S6 Edge Plus, Ellipsis 8, Galaxy Tab-E and the Galaxy Tab S2.
- Calendar entries and Memos are not reported for the Motorola Droid Turbo 2, Galaxy S6, Galaxy S6 Edge Plus, Ellipsis 8, Galaxy Tab-E and the Galaxy Tab S2.
- Call log data via Hangouts Dialer application was not reported for the Galaxy Tab-E or the Galaxy Tab S2.
- MMS attachments (i.e., audio, video, graphics) are not viewable with the preview-pane for the Motorola Droid Turbo 2, Galaxy S6 and the Galaxy S6 Edge Plus.
- SMS and MMS messages using the application FireChat were not reported for the Ellipsis 8, Galaxy Tab-E and the Galaxy Tab S2.
- Audio, video and graphic files are not viewable/playable with the internal viewer for the Ellipsis 8. When attempting to export the files, MPE+ crashes the application and the files are not exported.
- Documents (i.e., pdf, txt) are not reported for the Motorola Droid Turbo 2, Galaxy S6, Galaxy S6 Edge Plus, Ellipsis 8, Galaxy Tab-E and the Galaxy Tab S2.
- Social media related data i.e., Facebook, Twitter, LinkedIn, Instagram were not reported for the Motorola Droid Turbo 2, Galaxy S6, Galaxy S6 Edge Plus, Ellipsis 8, Galaxy Tab-E and the Galaxy Tab S2.
- Internet related data (i.e., bookmarks, history, email) were not reported for the Galaxy S6 or the Galaxy Tab-E.
- Partial Internet related data was reported. History or email data was not reported for the Galaxy S6 Edge Plus, Ellipsis 8 and Galaxy Tab S2. Note: Bookmarks were reported.
- Partial Internet related data was reported. Email data was not reported for the Motorola Droid Turbo 2. Note: Bookmarks and History data were reported.
- GPS related data was not reported for the Motorola Droid Turbo 2, Galaxy S6, Galaxy S6 Edge Plus, Ellipsis 8, Galaxy Tab-E and the Galaxy Tab S2.

NOTES:

- SMS messages containing multiple recipients are categorized as MMS messages and include a blank entry for each additional recipient.

See Table 3 below for more details.

MPE+ v5.6.0								
Test Cases – Internal Memory Acquisition		*Mobile Device Platform: Android*						
		Moto Droid Turbo 2	Galaxy S6	Galaxy S6 Edge Plus	LG G4	Ellipsis 8	Galaxy Tab-E	Galaxy Tab S2
Acquisition	Acquire All	*As Expected*	*As Expected*	*As Expected*	*Not As Expected*	*As Expected*	*As Expected*	*As Expected*
	Disrupted	*Not As Expected*	*Not As Expected*	*Not As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
Reporting	Preview-Pane	*As Expected*	*As Expected*	*As Expected*	*NA*	*As Expected*	*As Expected*	*As Expected*
	Generated Reports	*As Expected*	*As Expected*	*As Expected*	*NA*	*As Expected*	*As Expected*	*As Expected*
Equipment/ User Data	IMEI	*As Expected*	*As Expected*	*As Expected*	*NA*	*As Expected*	*As Expected*	*As Expected*
	MEID/ESN	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	MSISDN	*As Expected*	*As Expected*	*As Expected*	*NA*	*As Expected*	*As Expected*	*As Expected*
PIM Data	Contacts	*Partial*	*Partial*	*Partial*	*NA*	*Partial*	*Partial*	*Partial*
	Calendar	*Not As Expected*	*Not As Expected*	*Not As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Memos/Notes	*Not As Expected*	*Not As Expected*	*Not As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
Call Logs	Incoming	*As Expected*	*As Expected*	*As Expected*	*NA*	*NA*	*Not As Expected*	*Not As Expected*
	Outgoing	*As Expected*	*As Expected*	*As Expected*	*NA*	*NA*	*Not As Expected*	*Not As Expected*
	Missed	*As Expected*	*As Expected*	*As Expected*	*NA*	*NA*	*Not As Expected*	*Not As Expected*
SMS Messages	Incoming	*As Expected*	*As Expected*	*As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Outgoing	*As Expected*	*As Expected*	*As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
MMS Messages	Graphic	*Partial*	*Partial*	*Partial*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Audio	*Partial*	*Partial*	*Partial*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Video	*Partial*	*Partial*	*Partial*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Graphic	*As Expected*	*As Expected*	*As Expected*	*NA*	*Not As Expected*	*As Expected*	*As Expected*

MPE+ v5.6.0								
Test Cases – Internal Memory Acquisition		*Mobile Device Platform: Android*						
		Moto Droid Turbo 2	Galaxy S6	Galaxy S6 Edge Plus	LG G4	Ellipsis 8	Galaxy Tab-E	Galaxy Tab S2
Stand-alone Files	Audio	*As Expected*	*As Expected*	*As Expected*	*NA*	*Not As Expected*	*As Expected*	*As Expected*
	Video	*As Expected*	*As Expected*	*As Expected*	*NA*	*Not As Expected*	*As Expected*	*As Expected*
Application Data	Documents (txt, pdf files)	*Not As Expected*	*Not As Expected*	*Not As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
Social Media Data	Facebook	*Not As Expected*	*Not As Expected*	*Not As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Twitter	*Not As Expected*	*Not As Expected*	*Not As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	LinkedIn	*Not As Expected*	*Not As Expected*	*Not As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Instagram	*Not As Expected*	*Not As Expected*	*Not As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
Internet Data	Bookmarks	*As Expected*	*Not As Expected*	*As Expected*	*NA*	*As Expected*	*Not As Expected*	*As Expected*
	History	*As Expected*	*Not As Expected*	*Not As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Email	*Not As Expected*	*Not As Expected*	*Not As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
GPS Data	Coordinates/ Geo-tagged	*Not As Expected*	*Not As Expected*	*Not As Expected*	*NA*	*Not As Expected*	*Not As Expected*	*Not As Expected*
Non-Latin Character	Reported in native format	*As Expected*	*As Expected*	*As Expected*	*NA*	*As Expected*	*As Expected*	*As Expected*
Hashing	Case File/ Individual Files	*As Expected*	*As Expected*	*As Expected*	*NA*	*As Expected*	*As Expected*	*As Expected*
Case File Data Protection	Modify Case Data	*As Expected*	*As Expected*	*As Expected*	*NA*	*As Expected*	*As Expected*	*As Expected*

Table 3: Android Mobile Devices

4.2 iOS Mobile Devices

The internal memory contents for iOS devices were acquired and analyzed with MPE+ v5.6.0.

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

- Equipment / User data (i.e., MSISDN) was not reported for all iOS devices.
- Long memo entries are truncated for all iOS devices.
- Documents (txt, pdf) were not reported for all iOS devices.
- Social media related data for Facebook and Instagram were not reported for all iOS devices.
- Partial social media related data i.e., profile information, graphics were reported for Twitter (i.e., partial tweets, PMs, user data) for all iOS devices
- Email related data was not reported for all iOS devices.

NOTES:

- Middle name fields were not reported for Contact entries within the preview pane. The full name for Contacts can be found within AddressBook.sqlite database.
- Memos are not reported in the generated report. Memos can be found in NoteStore.sqlite for all iOS devices.
- Social media related data is not reported within the corresponding application folder i.e., Twitter, Instagram, Facebook, Facebook messenger, LinkedIn.
- Internet history is not reported within the preview pane, data can be found within the History.db file.

See Table 4 below for more details.

MPE+ v5.6.0						
Test Cases – Internal Memory Acquisition		*Mobile Device Platform: iOS*				
		iPhone 6	iPhone 6S	iPhone 6S Plus	iPad Mini	iPad Pro
Acquisition	Acquire All	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Disrupted	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Reporting	Preview-Pane	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Generated Reports	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Equipment/	IMEI	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*

MPE+ v5.6.0						
Test Cases – Internal Memory Acquisition		*Mobile Device Platform: iOS*				
		iPhone 6	iPhone 6S	iPhone 6S Plus	iPad Mini	iPad Pro
User Data	MEID/ESN	*NA*	*NA*	*NA*	*NA*	*NA*
	MSISDN	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*
PIM Data	Contacts	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Calendar	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Memos/Notes	*Partial*	*Partial*	*Partial*	*Partial*	*Partial*
Call Logs	Incoming	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Outgoing	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Missed	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
SMS Messages	Incoming	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Outgoing	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
MMS Messages	Graphic	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Audio	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Video	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Stand-alone Files	Graphic	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Audio	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Video	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Application Data	Documents (txt, pdf files)	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*
Social Media Data	Facebook	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Twitter	*Partial*	*Partial*	*Partial*	*Partial*	*Partial*
	LinkedIn	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Instagram	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Bookmarks	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*

MPE+ v5.6.0						
Test Cases – Internal Memory Acquisition		*Mobile Device Platform: iOS*				
		iPhone 6	iPhone 6S	iPhone 6S Plus	iPad Mini	iPad Pro
Internet Data	History	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
	Email	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*
GPS Data	Coordinates/ Geo-tagged	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Non-Latin Character	Reported in native format	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Hashing	Case File/ Individual Files	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*
Case File Data Protection	Modify Case Data	*As Expected*	*As Expected*	*As Expected*	*As Expected*	*As Expected*

Table 4: iOS Mobile Devices

4.3 Windows Mobile / Blackberry Devices

The internal memory contents for the feature phone was acquired and analyzed with MPE+ v5.6.0.

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

- Connectivity was not established to the HTC Win 8x device. The following error was reported – Error: RAPI was not loaded. Note: Drivers were successfully installed.
- Connectivity was not established to the Nokia Lumia 735. Note: Mobile Exploit and drivers were successfully installed.
- Connectivity was not established to the BlackBerry Q10 or the BlackBerry Z30. The following error was reported – Connectivity: An unknown error: 3. Note: Drivers were successfully installed, developer mode was initiated and Windows successfully recognized both BlackBerry devices.

See Table 5 below for more details.

MPE+ v5.6.0					
Test Cases – Internal Memory Acquisition		*Mobile Device Platform: Windows Mobile / BlackBerry*			
		HTC Win 8x	Nokia Lumia 735	BlackBerry Q10	BlackBerry Z30
Acquisition	Acquire All	*Not As Expected*	*Not As Expected*	*Not As Expected*	*Not As Expected*
	Disrupted	*NA*	*NA*	*NA*	*NA*
Reporting	Preview-Pane	*NA*	*NA*	*NA*	*NA*
	Generated Reports	*NA*	*NA*	*NA*	*NA*
Equipment/ User Data	IMEI/IMSI	*NA*	*NA*	*NA*	*NA*
	MEID/ESN	*NA*	*NA*	*NA*	*NA*
	MSISDN	*NA*	*NA*	*NA*	*NA*
PIM Data	Contacts	*NA*	*NA*	*NA*	*NA*
	Calendar	*NA*	*NA*	*NA*	*NA*
	Memos/Notes	*NA*	*NA*	*NA*	*NA*
Call Logs	Incoming	*NA*	*NA*	*NA*	*NA*
	Outgoing	*NA*	*NA*	*NA*	*NA*

MPE+ v5.6.0					
Test Cases – Internal Memory Acquisition		*Mobile Device Platform: Windows Mobile / BlackBerry*			
		HTC Win 8x	Nokia Lumia 735	BlackBerry Q10	BlackBerry Z30
	Missed	*NA*	*NA*	*NA*	*NA*
SMS Messages	Incoming	*NA*	*NA*	*NA*	*NA*
	Outgoing	*NA*	*NA*	*NA*	*NA*
MMS Messages	Graphic	*NA*	*NA*	*NA*	*NA*
	Audio	*NA*	*NA*	*NA*	*NA*
	Video	*NA*	*NA*	*NA*	*NA*
Stand-alone Files	Graphic	*NA*	*NA*	*NA*	*NA*
	Audio	*NA*	*NA*	*NA*	*NA*
	Video	*NA*	*NA*	*NA*	*NA*
Application Data	Documents (txt, pdf files)	*NA*	*NA*	*NA*	*NA*
Social Media Data	Facebook	*NA*	*NA*	*NA*	*NA*
	Twitter	*NA*	*NA*	*NA*	*NA*
	LinkedIn	*NA*	*NA*	*NA*	*NA*
	Instagram	*NA*	*NA*	*NA*	*NA*
Internet Data	Bookmarks	*NA*	*NA*	*NA*	*NA*
	History	*NA*	*NA*	*NA*	*NA*
	Email	*NA*	*NA*	*NA*	*NA*
GPS Data	Coordinates/ Geo-tagged	*NA*	*NA*	*NA*	*NA*
Non-Latin Character	Reported in native format	*NA*	*NA*	*NA*	*NA*
Hashing	Case File/ Individual Files	*NA*	*NA*	*NA*	*NA*
Case File Data Protection	Modify Case Data	*NA*	*NA*	*NA*	*NA*

Table 5: Windows Mobile and BlackBerry Devices

4.4 Universal Integrated Circuit Cards (UICCs)

The internal memory contents for Universal Integrated Circuit Cards (UICCs) were acquired and analyzed with MPE+ v5.6.0.

All test cases pertaining to the acquisition of UICCs were successful with the exception of the following:

- Connectivity was not established. The following error was produced: Failed to connect to reader! Please check that the card is inserted correctly.

NOTES:

- Multiple PC/SC card readers were used – each of which Windows successfully identified.

See Table 6 below for more details.

MPE+ v5.6.0		
Test Cases – UICC Acquisition		*Universal Integrated Circuit Card*
Connectivity	Non Disrupted	*Not As Expected*
	Disrupted	*NA*
Equipment/ User Data	Service Provider Name (SPN)	*NA*
	ICCID	*NA*
	IMSI	*NA*
	MSISDN	*NA*
PIM Data	Abbreviated Dialing Numbers (ADNs)	*NA*
	Last Numbers Dialed (LNDs)	*NA*
	SMS Messages	*NA*
	EMS Messages	*NA*
Location Related Data	LOCI	*NA*
	GPRSLOCI	*NA*
Acquisition	Acquire All	*NA*
	Selected All	*NA*
	Select Individual	*NA*
Case File Data Protection	Modify Case Data	*NA*
Password Protected SIM Acquire	Acquisition of Protected SIM	*NA*
PIN/PUK Attempts	PIN attempts reported	*NA*

MPE+ v5.6.0		
Test Cases – UICC Acquisition		*Universal Integrated Circuit Card*
	PUK attempts reported	*NA*
Non-ASCII Character	Non-ASCII characters	*NA*
Hashing	Hashes reported for acquired data objects	*NA*

Table 6: Universal Integrated Circuit Cards