



# UFED Touch/ Physical Analyzer

v6.2.1.17 / v6.3.0.284

Test Results for Mobile Device Acquisition Tool

*January 22, 2018*



**Homeland  
Security**

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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.

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<http://www.dhs.gov/science-and-technology/cyber-security-division>.

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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 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.cfft.nist.gov/>).

This document reports the results from testing Cellebrite's UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284 across supported mobile devices and associated media e.g., smart phones, tablets, feature phones and UICCs.

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-cfft-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.cfft.nist.gov/mobile\\_devices.htm](http://www.cfft.nist.gov/mobile_devices.htm).

# Test Results for Mobile Device Acquisition Tool

Tool Tested: UFED Touch / Physical Analyzer

Software Version: V6.2.1.17 / v6.3.0.284

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## 1 Results Summary

Cellebrite's UFED Touch / Physical Analyzer is a portable digital forensic platform that brings comprehensive extraction capabilities anywhere needed such as in the lab, a remote location or in the fields.

It extracts data in a closed environment that is separate from other applications, eliminating any risk of cross-contaminating digital evidence. Users can view call logs, images, videos and other logical data, directly from the Touch, at the point of extraction for quick access to key evidence.

UFED Touch / Physical Analyzer 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, feature phones, UICCs/SIMs). Except for the following anomalies, the tool acquired all supported data objects completely and accurately for all mobile devices tested.

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

- Graphic files with associated Contact/Address Book entries are not reported. (Devices: *LG G4, LG G5, Motorola Droid Turbo 2, Google Pixel XL, Motorola Z Force, HTC 10, Galaxy Tab S2, iPhone5S*)
- Graphic files with associated Contact/Address Book entries are reported under the images category separate from the contact information. (Devices: *LG G5, Galaxy S6 Edge Plus, Samsung J3, Kyocera Dura Vx, LG Cosmos 3*)
- Metadata i.e., street address with associated Contact/Address Book entries are not reported. (Device: *Kyocera DuraXV*)
- Long notes/memos are truncated. (Devices: *Galaxy S3, Galaxy S7*)
- Notes/memos are not reported. (Devices: *Galaxy S5, LG G4, LG G5, Samsung J3, Motorola Z Force, HTC 10, Galaxy Note3, Galaxy Tab S2*)
- Deleted Notes are marked with a status of Deleted as well as Active. (Device: *iPad Pro*)
- Notes/Memos are not reported within the preview pane (they can be found within the memos.db file). (Device: *Google Pixel XL*)

- Notes/Memos are reported as active as well as deleted. (Device: *iPhone 4*)
- Call log (i.e., incoming, outgoing, missed calls) is not reported. (Device: *LG G5*)
- MMS messages are partially reported within the preview-pane (MMS and SMS messages under Chats) and inconsistent with the sms.db file. (Device: *iPad Pro*)
- MMS messages are not reported. (Devices: *Samsung J3*, *iPad Air*)
- MMS reported can't be opened/played. (Devices: *Galaxy S5*, *LG G4*, *iPad Pro*)

#### ***Stand-alone Files:***

- Document files (i.e., .txt, .pdf) are not reported. (Devices: *LG G4*, *LG G5*, *Motorola Droid Turbo 2*, *HTC 10*, *Galaxy Note3*, *iPhone 4*, *iPad Mini*, *iPad Air*, *iPad Pro*)
- Document files (i.e., graphic, audio, video) are partially reported.(Devices: *Galaxy S5*, *iPad Pro*)
- Document files (i.e., graphic, audio) are partially reported.(Device: *LG G4*)
- Document files (i.e., graphic, video) are partially reported.(Devices: *Motorola Droid Turbo 2*, *Galaxy S6 Edge Plus*)
- Document files (i.e., graphic, audio, video)are not reported. (Device: *Galaxy Note3*)

#### ***Social media Data:***

- Social media related data i.e., Facebook v79.0.0.44.69(49363082), LinkedIn and Instagram is partially reported e.g., profile and account related data. (Device: *iPhone 7S Plus*)
- Social media related data i.e., Facebook v40.0 and LinkedIn v883.0 is not reported. (Device: *iPhone5S*)
- Social media related data i.e, Facebook, LinkedIn and Instagram is not reported. (Devices: *Samsung J3 – Facebook v110.0.0.0.15.69*, *LinkedIn v4.1.9*, *Instagram v10.7.0*, *iPhone 6S Plus – Facebook v48.0*, *LinkedIn v910.5*, *Instagram v7.15.0*)
- Social media related data i.e., Facebook v48.0 and Instagram v7.15.0 is not reported. (Device: *iPad Mini*)
- Social media related data (i.e., LinkedIn) is partially reported. (Devices: *Galaxy S5 – LinkedIn v3.3.3*, *Galaxy S7 – LinkedIn v4.1.9*, *iPad Mini – LinkedIn v910.6*)
- Social media related data (i.e., Facebook v37.0, Twitter v6.34.2 and LinkedIn v881.0) is partially reported (only graphic files). (Device: *iPad Air*).
- Social media related data i.e., Twitter v6.33.0 is not reported. (Device: *Google Pixel XL*)
- Social media related data i.e., Facebook v48.0, LinkedIn v910.6 and Instagram v7.16.0 is not reported. (Device: *iPad Pro*)
- Social media related data i.e., Instagram is not reported. (Device: *Galaxy S7 – Instagram v10.7.0*, *Galaxy Tab-E – Instagram v7.16.0*, *Galaxy Tab S2 – Instagram v7.16.0*)
- Social media related data i.e., Facebook, Twitter, LinkedIn is not reported. (Devices: *HTC 10 – Facebook v110.0.0.15.69*, *Twitter v6.33.0*, *LinkedIn v4.1.9*, *Galaxy Note3 – Facebook v8.0.0.26.24*, *Twitter v5.7.0*, *LinkedIn v3.3.3*)

➤ **Note:** *The acquisition and reporting of social media related data extracted from a*

*mobile device is dependent upon various factors - the state of the device (e.g., jailbroken, rooted), the data extraction method (e.g., logical, physical), the version of the app and how the data is stored.*

***Internet Related Data:***

- Internet related data (i.e., bookmarks, history, email) is not reported. (Devices: *LG G4, Motorola Droid Turbo 2, Galaxy S6 Edge Plus, Samsung J3, Google Pixel XL*)
- Internet related data (i.e., history) is not reported. (Device: *iPhone 4*)
- Email related data is not reported. (Devices: *iPhone 5S, iPhone 6S Plus, iPhone 7 Plus, iPad Mini, iPad Air, iPad Pro*)

***GPS Related Data:***

- GPS related data (i.e., address, logitud/latitude coordinates) is not reported. (Devices: *Motorola Droid Turbo 2, Galaxy Note3, iPad Pro*)

***UICCs:***

- Acquisition of Protected SIM was not completed.
- Acquisition of PIN/PUK SIM cards (i.e., remaining attempts were incorrectly reported) were not completed.

For more test result details see section 4.



## 2 Mobile Devices

The following table lists the mobile devices used for testing UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284.

Make	Model	OS	Firmware	Network
Apple	iPhone 4	iOS v4.3.3 (8J2)	04.10.01	GSM
Apple	iPhone 5S	iOS 7.1 (11D167)	2.18.02	CDMA
Apple	iPhone 6S Plus	iOS 9.2.1 (13C75)	1.23.00	CDMA
Apple	iPhone 7 Plus	iOS 10.2 (14C92)	1.33.00	CDMA
Apple	iPad Mini	iOS 9.2.1 (13B143)	4.32.00	CDMA
Apple	iPad Air	iOS 7.1 (11D167)	2.18.02	CDMA
Apple	iPad Pro	iOS 9.2.1 (13C75)	4.52.00	CDMA
Samsung	Galaxy S3 SGH-1747	Android 4.1.2	1747UCDMG2	GSM
Samsung	Galaxy S5 SM-G900V	Android 4.2.2	G900V.05	CDMA
LG	G4	Android 5.1.1	LMY47D	CDMA
LG	G5	Android 6.0.1	MMB29M	CDMA
Motorola	Droid Turbo2	Android 5.1.1	LCK23.130-23	CDMA
Samsung	Galaxy S6 Edge Plus – SM-G928V	Android 5.1.1	LMY47X.G928VVRU2AOJ2	CDMA
Samsung	J3 – SM-J320V	Android 6.0.1	MMB29M.J320VVRU2AP12	CDMA
Google	Pixel XL	Android 7.1.1	NMF26U	CDMA
Samsung	GS7 – SM-G930V	Android 6.0.1	MMB29M.G930VVRU4AP13	CDMA
Motorola	Z Force XT1650	Android 7.0	NCLS25.86-11-4	CDMA
HTC 10	HTC6545LVW	Android 6.0.1	1.85.605.8.8.0_g CL774095	CDMA
Samsung	Galaxy Note3	Android 4.4.2	KOT49H.N900VVRVCNC4	CDMA
Ellipsis 8	QTAQZ3	Android 4.4.2	KOT49H	CDMA

Make	Model	OS	Firmware	Network
Samsung	Galaxy Tab-E	Android 5.1.1	LMY47X.T567VVRU1AOH1	CDMA
Samsung	Galaxy Tab S2	Android 5.1.1	LMY47X.T817BVRU2AOJ2	CDMA
Kyocera	DuraXV	Brew 1.0.4	3.819VZ	CDMA
LG	Cosmos 3	BREW 1.0.2	VN251ZV6	CDMA
Samsung	Rugby III	TRKE-PNX69xx	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.

#### 3.1 Execution Environment

UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284.

#### 3.2 Internal Memory Data Objects

UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284 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	<i>Regular Length</i>
	<i>Maximum Length</i>
	<i>Special Character</i>
	<i>Blank Name</i>
	<i>Regular Length, email</i>
	<i>Regular Length, graphic</i>
	<i>Regular Length, Address</i>
	<i>Deleted Entry</i>
	<i>Non-Latin Entry</i>
PIM Data: Datebook/Calendar; Memos	<i>Contact Groups</i>
	<i>Regular Length</i>
	<i>Maximum Length</i>
	<i>Deleted Entry</i>
	<i>Special Character</i>
Call Logs	<i>Blank Entry</i>
	<i>Incoming</i>
	<i>Outgoing</i>
	<i>Missed</i>

<b>Data Objects</b>	<b>Data Elements</b>
Call Logs	<i>Incoming – Deleted</i>
	<i>Outgoing – Deleted</i>
	<i>Missed - Deleted</i>
Text Messages	<i>Incoming SMS – Read</i>
	<i>Incoming SMS – Unread</i>
	<i>Outgoing SMS</i>
	<i>Incoming EMS – Read</i>
	<i>Incoming EMS – Unread</i>
	<i>Outgoing EMS</i>
	<i>Incoming SMS – Deleted</i>
	<i>Outgoing SMS – Deleted</i>
	<i>Incoming EMS – Deleted</i>
	<i>Outgoing EMS – Deleted</i>
MMS Messages	<i>Non-Latin SMS/EMS</i>
	<i>Incoming Audio</i>
	<i>Incoming Graphic</i>
	<i>Incoming Video</i>
	<i>Outgoing Audio</i>
	<i>Outgoing Graphic</i>
Application Data	<i>Outgoing Video</i>
	<i>Device Specific App Data</i>
Stand-alone data files	<i>Audio</i>
	<i>Graphic</i>
	<i>Video</i>
	<i>Audio – Deleted</i>
	<i>Graphic - Deleted</i>
	<i>Video - Deleted</i>
Internet Data	<i>Visited Sites</i>
	<i>Bookmarks</i>
	<i>E-mail</i>
Location Data	<i>GPS Coordinates</i>
	<i>Geo-tagged Data</i>
Social Media Data	<i>Facebook</i>
	<i>Twitter</i>
	<i>LinkedIn</i>
	<i>Instagram</i>

**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, BlackBerry, Feature phones, UICC) and the make and model of mobile devices used for testing UFED Touch v6.2.1.17 / Physcal Analyzer v6.3.0.284

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 UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284.

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

- Metadata i.e., graphic files with associated Contact/Address Book entries are not reported for the LG G4, LG G5, Motorola Droid Turbo 2, Google Pixel XL, Motorola Z Force, HTC 10 and Galaxy Tab S2.
- Metadata i.e., graphic files with associated Contact/Address Book entries are reported under images category separate from contact information for the Galaxy S6 Edge Plus and Samsung J3.
- Long notes/memos are truncated for the Galaxy S3 and Galaxy S7.
- Notes/memos are not reported for the Galaxy S5, LG G4, LG G5, Samsung J3, Motorola Z Force, HTC 10, Galaxy Note3 and Galaxy Tab S2.
- Memos are not reported within the preview pane (i.e., memos/notes can be found within the memo.db file) for the Google Pixel XL.
- Call log (i.e., incoming, outgoing, missed calls) is not reported for the LG G5.
- MMS messages attachments (audio, graphic, video) are partially reported (attachments can't be opened/played) for the Galaxy S5 and LG G4.
- MMS messages are not reported for the Samsung J3.
- Stand-alone files (i.e., audio, graphic, video) files are partially reported (files can't be opened/played) for the Galaxy S5.
- Stand-alone files (i.e., audio, graphic) files are partially reported (files can't be opened/played) for the LG G4.
- Stand-alone files (i.e., graphic, video) files are partially reported (files can't be opened/played) for the Motorola Droid Turbo 2.
- Stand-alone files (i.e., audio, graphic, video) are not reported for the Galaxy Note3.
- Stand-alone files (i.e., .txt, .pdf) files are not reported for the LG G4, LG G5, Motorola Droid Turbo 2, Galaxy S6 Edge Plus and HTC 10 and Galaxy Note3.
- Partial LinkedIn social media related data (i.e., messages reported as email notification only) is reported for the Galaxy S5.
- Social media data (i.e., Facebook, LinkedIn, Instagram) is not reported for the Samsung J3.
- Social media data (i.e., Twitter) is not reported for the Google Pixel XL.
- Partial LinkedIn social media related data (i.e., all messages marked as deleted) is reported for the Galaxy S7.
- Social media related data (i.e., Instagram) is not reported for the Galaxy S7, Galaxy Tab-E and Galaxy Tab S2.
- Social media related data (i.e., Facebook, Twitter, LinkedIn) is not reported for the HTC 10 and Galaxy Note3.
- Internet related data (i.e., bookmarks, history, email) is not reported for the LG G4, Motorola Droid Turbo 2, Galaxy S6 Edge Plus, Samsung J3 and Google Pixel XL.
- GPS related data is not reported for the Motorola Droid Turbo 2 and Galaxy Note3.

NOTE:

- Email is not supported for the Galaxy S7 Edge. However, emails were recovered.

See Table 3a, 3b below for more details.

UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284									
Test Cases – Internal Memory Acquisition		Mobile Device Platform: Android							
		Galaxy S3	Galaxy S5	LG G4	LG G5	Motorola Droid Turbo 2	Galaxy S6 Edge Plus	Samsung J3	Google Pixel XL
Acquisition	Acquire All	As Expected	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	As Expected
Reporting	Preview-Pane	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	Partial
	Generated Reports	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
Equipment/ User Data	IMEI	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
	MEID/ESN	NA	NA	NA	NA	NA	NA	NA	NA
	MSISDN	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
PIM Data	Contacts	As Expected	As Expected	Partial	Partial	Partial	Partial	Partial	Partial
	Calendar	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
	Memos/ Notes	Partial	Not As Expected	Not As Expected	Not As Expected	As Expected	As Expected	Not As Expected	Partial
Call Logs	Incoming	As Expected	As Expected	As Expected	Not As Expected	As Expected	As Expected	As Expected	As Expected
	Outgoing	As Expected	As Expected	As Expected	Not As Expected	As Expected	As Expected	As Expected	As Expected
	Missed	As Expected	As Expected	As Expected	Not 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	As Expected
	Outgoing	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
MMS Messages	Graphic	As Expected	Partial	Partial	As Expected	As Expected	As Expected	Not As Expected	As Expected
	Audio	As Expected	Partial	Partial	As Expected	As Expected	As Expected	Not As Expected	As Expected
	Video	As Expected	Partial	Partial	As Expected	As Expected	As Expected	Not As Expected	As Expected

**UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284**

Test Cases – Internal Memory Acquisition		Mobile Device Platform: Android							
		Galaxy S3	Galaxy S5	LG G4	LG G5	Motorola Droid Turbo 2	Galaxy S6 Edge Plus	Samsung J3	Google Pixel XL
Stand-alone Files	Graphic	<i>As Expected</i>	<i>Partial</i>	<i>Partial</i>	<i>As Expected</i>	<i>Partial</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>
	Audio	<i>As Expected</i>	<i>Partial</i>	<i>Partial</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>
	Video	<i>As Expected</i>	<i>Partial</i>	<i>As Expected</i>	<i>As Expected</i>	<i>Partial</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>
Application Data	Documents (txt, pdf files)	<i>As Expected</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>As Expected</i>	<i>As Expected</i>
Social Media Data	Facebook	<i>As Expected</i>	<i>As Expected</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>Not As Expected</i>	<i>NA</i>
	Twitter	<i>As Expected</i>	<i>As Expected</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>As Expected</i>	<i>Not As Expected</i>
	LinkedIn	<i>NA</i>	<i>Partial</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>Not As Expected</i>	<i>NA</i>
	Instagram	<i>NA</i>	<i>NA</i>	<i>As Expected</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>Not As Expected</i>	<i>NA</i>
Internet Data	Bookmarks	<i>As Expected</i>	<i>As Expected</i>	<i>Not As Expected</i>	<i>NA</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>Not As Expected</i>
	History	<i>As Expected</i>	<i>As Expected</i>	<i>Not As Expected</i>	<i>NA</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>Not As Expected</i>
	Email	<i>As Expected</i>	<i>As Expected</i>	<i>Not As Expected</i>	<i>NA</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>Not As Expected</i>
GPS Data	Coordinates /Geo-tagged	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>Not As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>
Non-Latin Character	Reported in native format	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>
Hashing	Case File/ Individual Files	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>
Case File Data Protection	Modify Case Data	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>

**Table 3a: Android Mobile Devices**

**UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284**

Test Cases – Internal Memory Acquisition		Mobile Device Platform: Android						
		Samsung GS7	Motorol Z Force	HTC 10	Galaxy Note3	Ellipsis 8	Galaxy Tab-E	Galaxy Tab S2
Acquisition	Acquire All	As Expected	As Expected	As Expected	As Expected	NA	As Expected	As Expected
	Disrupted	As Expected	As Expected	As Expected	As Expected	NA	As Expected	As Expected
Reporting	Preview-Pane	As Expected	As Expected	As Expected	As Expected	NA	As Expected	As Expected
	Generated Reports	As Expected	As Expected	As Expected	As Expected	NA	As Expected	As Expected
Equipment/ User Data	IMEI	As Expected	As Expected	As Expected	As Expected	NA	As Expected	As Expected
	MEID/ESN	NA	NA	NA	NA	NA	NA	NA
	MSISDN	As Expected	As Expected	As Expected	As Expected	NA	As Expected	As Expected
PIM Data	Contacts	As Expected	Partial	Partial	As Expected	NA	As Expected	Partial
	Calendar	As Expected	As Expected	As Expected	As Expected	NA	As Expected	As Expected
	Memos/Notes	Partial	Not As Expected	Not As Expected	Not As Expected	NA	As Expected	Not As Expected
Call Logs	Incoming	As Expected	As Expected	As Expected	As Expected	NA	NA	NA
	Outgoing	As Expected	As Expected	As Expected	As Expected	NA	NA	NA
	Missed	As Expected	As Expected	As Expected	As Expected	NA	NA	NA
SMS Messages	Incoming	As Expected	As Expected	As Expected	As Expected	NA	NA	NA
	Outgoing	As Expected	As Expected	As Expected	As Expected	NA	NA	NA
MMS Messages	Graphic	As Expected	As Expected	As Expected	As Expected	NA	NA	NA
	Audio	As Expected	As Expected	As Expected	As Expected	NA	NA	NA
	Video	As Expected	As Expected	As Expected	As Expected	NA	NA	NA
Stand-alone Files	Graphic	As Expected	As Expected	As Expected	Not As Expected	NA	As Expected	As Expected
	Audio	As Expected	As Expected	As Expected	Not As Expected	NA	As Expected	As Expected
	Video	As Expected	As Expected	As Expected	Not As Expected	NA	As Expected	As Expected
Application Data	Documents (txt, pdf files)	As Expected	NA	Not As Expected	Not As Expected	NA	As Expected	As Expected



**UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284**

<b>Test Cases – Internal Memory Acquisition</b>		<i>Mobile Device Platform: Android</i>						
		Samsung GS7	Motorol Z Force	HTC 10	Galaxy Note3	Ellipsis 8	Galaxy Tab-E	Galaxy Tab S2
<b>Social Media Data</b>	Facebook	<i>As Expected</i>	<i>NA</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>NA</i>	<i>As Expected</i>	<i>NA</i>
	Twitter	<i>As Expected</i>	<i>NA</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>NA</i>	<i>As Expected</i>	<i>NA</i>
	LinkedIn	<i>Partial</i>	<i>NA</i>	<i>Not As Expected</i>	<i>Not As Expected</i>	<i>NA</i>	<i>As Expected</i>	<i>NA</i>
	Instagram	<i>Not As Expected</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>Not As Expected</i>	<i>Not As Expected</i>
<b>Internet Data</b>	Bookmarks	<i>As Expected</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>
	History	<i>As Expected</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>
	Email	<i>As Expected</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>
<b>GPS Data</b>	Coordinate s/Geo-tagged	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>Not As Expected</i>	<i>NA</i>	<i>As Expected</i>	<i>As Expected</i>
<b>Non-Latin Character</b>	Reported in native format	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>NA</i>	<i>As Expected</i>	<i>As Expected</i>
<b>Hashing</b>	Case File/ Individual Files	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>NA</i>	<i>As Expected</i>	<i>As Expected</i>
<b>Case File Data Protection</b>	Modify Case Data	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>As Expected</i>	<i>NA</i>	<i>As Expected</i>	<i>As Expected</i>

**Table 3b: Android Devices**

## 4.2 iOS Mobile Devices

The internal memory contents for iOS devices were acquired and analyzed with UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284.

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

- Metadata i.e., graphic files with associated Contact/Address Book entries are not reported for the iPhone 5S.
- Deleted Notes are reported as both, deleted and active, for the iPad Pro.
- Notes are reported as active as well as deleted for the iPhone 4.
- MMS messages are partially reported within the preview-pane (MMS and SMS messages under Chats) and inconsistent with the sms.db file. Preview pane reports MMS category but not SMS category.
- MMS messages are not reported for the iPad Air.
- MMS messages reported can't be opened for the iPad Pro.
- Stand-alone files (i.e., graphic) are partially reported (only thumbnail is reported). (Device: *iPad Pro*)
- Stand-alone files (i.e., audio, video) are partially reported (files can't be opened/played). (Device: *iPad Pro*)
- Stand-alone document files (i.e., .pdf, .txt) are not reported for the iPad Mini, iPad Air, iPad Pro and iPhone 4.
- Social media related data (i.e., Facebook, LinkedIn and Instagram) is partially reported (profile and account related data) for the iPhone 7S Plus.
- Social media related data (i.e., Facebook and LinkedIn) is not reported for the iPhone 5S.
- Social media related data (i.e., Facebook and Instagram) is not reported for the iPad Mini.
- Social media related data (i.e., LinkedIn) is partially reported (account related data) for the iPad Mini.
- Social media related data (i.e., Facebook, Twitter and LinkedIn) is partially reported (only pictures) for the iPad Air.
- Social media related data (i.e., Facebook, Instagram, LinkedIn) was not reported for the iPad Pro.
- Internet related data (i.e., Web History) is not reported for the iPhone 4.
- Internet related data (i.e., Emails) is not reported for the iPhone 5S, iPhone 6S Plus, iPhone 7 Plus, iPad Mini, iPad Air and iPad Pro.
- GPS realated data was not reported for the iPad Pro.

### NOTES:

- MMS messages are reported under the *Chats* category, tool does not create the MMS category for the iPhone 6S Plus.
- SMS and MMS are reported under the *Chats* category for the iPad Mini.

See Table 4 below for more details.

**UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284**

Test Cases – Internal Memory Acquisition		Mobile Device Platform: iOS						
		iPhone 4	iPhone 5S	iPhone 6S Plus	iPhone 7 Plus	iPad Mini	iPad Air	iPad Pro
Acquisition	Acquire All	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	Partial
	Generated Reports	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
Equipment/ User Data	IMEI	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
	MEID/ESN	NA	NA	NA	NA	NA	NA	NA
	MSISDN	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
PIM Data	Contacts	As Expected	Partial	As Expected	As Expected	As Expected	As Expected	As Expected
	Calendar	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
	Memos/Notes	Partial	As Expected	As Expected	As Expected	As Expected	As Expected	Partial
Call Logs	Incoming	As Expected	As Expected	As Expected	As Expected	NA	NA	NA
	Outgoing	As Expected	As Expected	As Expected	As Expected	NA	NA	NA
	Missed	As Expected	As Expected	As Expected	As Expected	NA	NA	NA
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	As Expected	As Expected	Not As Expected	Not As Expected
	Audio	As Expected	As Expected	As Expected	As Expected	As Expected	Not As Expected	Not As Expected
	Video	As Expected	As Expected	As Expected	As Expected	As Expected	Not As Expected	Not As Expected
Stand-alone Files	Graphic	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	Partial
	Audio	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	Partial
	Video	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	Partial
Application Data	Documents (txt, pdf files)	Not As Expected	Not As Expected	As Expected	As Expected	Not As Expected	Not As Expected	Not As Expected

**UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284**

<b>Test Cases – Internal Memory Acquisition</b>		<i>Mobile Device Platform: iOS</i>						
		iPhone 4	iPhone 5S	iPhone 6S Plus	iPhone 7 Plus	iPad Mini	iPad Air	iPad Pro
<b>Social Media Data</b>	Facebook	NA	Not As Expected	Not As Expected	Partial	Not As Expected	Partial	Not As Expected
	Twitter	NA	As Expected	As Expected	As Expected	As Expected	Partial	As Expected
	LinkedIn	NA	Not As Expected	Not As Expected	Partial	Partial	Partial	Not As Expected
	Instagram	NA	NA	Not As Expected	Partial	Not As Expected	NA	Not As Expected
<b>Internet Data</b>	Bookmarks	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
	History	Not As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
	Email	As Expected	Not As Expected	Not As Expected	Not As Expected	Not As Expected	Partial	Not As Expected
<b>GPS Data</b>	Coordinates/Geo-tagged	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	Not As Expected
<b>Non-Latin Character</b>	Reported in native format	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
<b>Hashing</b>	Case File/Individual Files	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected
<b>Case File Data Protection</b>	Modify Case Data	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected	As Expected

**Table 4: iOS Mobile Devices**

### 4.3 Feature Devices

The internal memory contents for BlackBerry and Feature phones were acquired and analyzed with UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284.

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

- Metadata i.e., graphic files with associated Contact/Address Book entries are reported separate from the contact information for the Kyocera DuraXV and LG Cosmos 3.
  - Metadata i.e., street address with associated Contact/Address Book entries are not reported for the Kyocera DuraXV.
- Note: *Non-ASCII characters are not displayed in their native format for the LG Cosmos 3 when performing a logical extraction.*

See Table 5 below for more details.

UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284				
Test Cases – Internal Memory Acquisition		Mobile Device Platform: Feature Phone		
		Kyocera Dura XV	LG Cosmos 3	Rugby III
Acquisition	Acquire All	As Expected	As Expected	NA
	Disrupted	As Expected	As Expected	NA
Reporting	Preview-Pane	As Expected	As Expected	NA
	Generated Reports	As Expected	As Expected	NA
Equipment/ User Data	IMEI	As Expected	NA	NA
	MEID/ESN	NA	NA	NA
	MSISDN	As Expected	NA	NA
PIM Data	Contacts	Partial	Partial	NA
	Calendar	NA	NA	NA
	Memos/Notes	NA	NA	NA
Call Logs	Incoming	NA	NA	NA
	Outgoing	NA	NA	NA
	Missed	NA	NA	NA

UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284				
Test Cases – Internal Memory Acquisition		Mobile Device Platform: Feature Phone		
		Kyocera Dura XV	LG Cosmos 3	Rugby III
SMS Messages	Incoming	NA	As Expected	NA
	Outgoing	NA	As Expected	NA
MMS Messages	Graphic	NA	As Expected	NA
	Audio	NA	As Expected	NA
	Video	NA	As Expected	NA
Stand-alone Files	Graphic	As Expected	As Expected	NA
	Audio	As Expected	As Expected	NA
	Video	As Expected	As Expected	NA
Application Data	Documents (txt, pdf files)	NA	NA	NA
Social Media Data	Facebook	NA	NA	NA
	Twitter	NA	NA	NA
	LinkedIn	NA	NA	NA
	Instagram	NA	NA	NA
Internet Data	Bookmarks	NA	NA	NA
	History	NA	NA	NA
	Email	NA	NA	NA
GPS Data	Coordinates/Geo-tagged	NA	NA	NA
Non-Latin Character	Reported in native format	As Expected	As Expected	NA
Hashing	Case File/Individual Files	As Expected	As Expected	NA
Case File Data Protection	Modify Case Data	As Expected	As Expected	NA

Table 5: Feature Phones

## 4.4 Universal Integrated Circuit Cards (UICCs)

The internal memory contents for Universal Integrated Circuit Cards (UICCs) were acquired and analyzed with UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284.

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

- Acquisition of Protected SIM was not completed.
- Acquisition of PIN/PUK SIM cards (i.e., remaining attempts were incorrectly reported) were not completed.

See Table 6 below for more details.

UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284		
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	Not As Expected
PIN/PUK Attempts	PIN attempts reported	Not As Expected
	PUK attempts reported	Not As Expected
Non-ASCII Character	Non-ASCII characters	As Expected

UFED Touch v6.2.1.17 / Physical Analyzer v6.3.0.284		
Test Cases – UICC Acquisition		<i>Universal Integrated Circuit Card</i>
Hashing	Hashes reported for acquired data objects	<i>As Expected</i>

**Table 6: Universal Integrated Circuit Cards**