CASE STUDY REPORT: EXPLORING FIELD TEST MODE ON SMARTPHONES

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1. Introduction

The objective of this case study is to explore and understand key networking information available on smartphones using Field Test Mode. This mode provides insights into various parameters that influence network connectivity and performance.

2. Device Types Used

The devices used in this case study include:

Android Phone

3. Methodology

Field Test Mode was accessed on each device by dialling specific codes. The following key parameters were collected:

IMEI Number

MAC Address

IP Address

Network Operator/Brand

Network Type (4G LTE, 5G, etc.)

Signal Strength (dBm)

Mobile Location Information (LAC and CID)

4. Key Network Parameters

IMEI Number (International Mobile Equipment Identity):

A unique identifier for mobile devices, used for tracking and blocking lost or stolen phones on cellular networks.

MAC Address (Media Access Control Address):

A unique identifier assigned to your device's network interface, essential for local network connections.

IP Address (Internet Protocol Address):

An address that identifies your device on a network, allowing for communication and internet access.

Network Operator/Brand:

Indicates the cellular provider, impacting service quality.

Network Type (4G LTE, 5G, etc.):

Shows the technology used for internet connectivity, affecting speed and performance.

Signal Strength (Measured in dBm):

Indicates the quality of the network connection, with higher (less negative) values representing better quality.

Mobile Location Information (LAC - Location Area Code and CID - Cell ID):

Identifies the cell tower connection for tracking and performance analysis.

5.Screenshots:
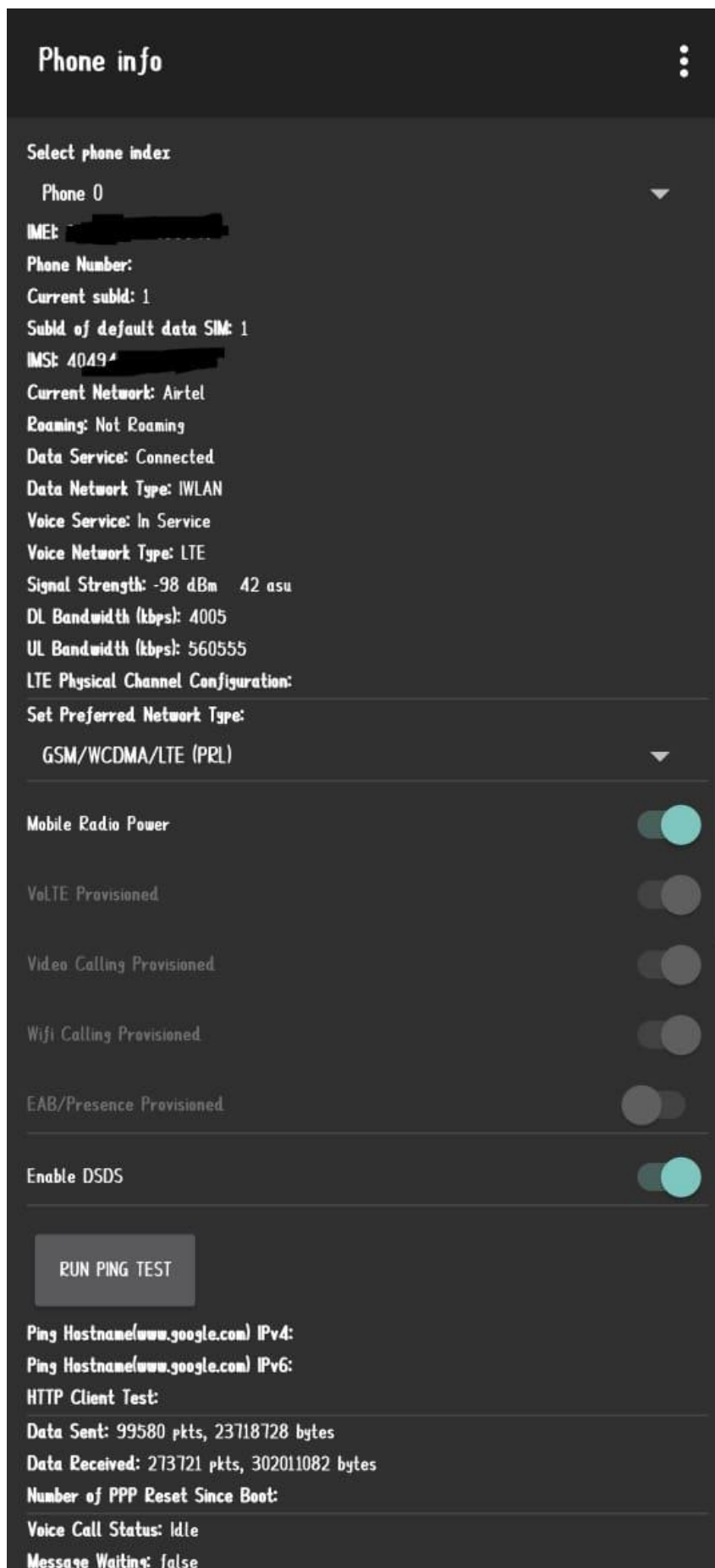
Phone info   ⋮

RUN PING TEST

Ping Hostname(www.google.com) IPv4:

Ping Hostname(www.google.com) IPv6:

HTTP Client Test:

Data Sent: 99580 pkts, 23718728 bytes

Data Received: 273721 pkts, 302011082 bytes

Number of PPP Reset Since Boot:

Voice Call Status: Idle

Message Waiting: false

Call Redirect: false

Cell Info Refresh Rate:

Disabled   ▼

All Cell Measurement Info:

LTE

SRV	MCC	MNC	TAC	CID	PCI	EARFCN	BW	RSRP	RSRQ	TA
R+P	404	94	55357	16448	192	39294		-107	-19	
N			65535	26843	400	39294		-104	-14	
N			65535	26843	400	39150		-104	-14	
N			65535	26843	192	39150		-107	-17	

CARRIER PROVISIONING INFO	TRIGGER CARRIER PROVISIONING	OEM-SPECIFIC INFO/ SETTINGS

SMSC: _____   **UPDATE**   **REFRESH**

TOGGLE DNS CHECK   0.0.0.0 not allowed

6. Conclusion:

The exploration of Field Test Mode on smartphones provides valuable insights into network parameters that influence connectivity and performance. Understanding these parameters is crucial for optimizing mobile network use.

7. References

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Florida State University. (2015). Field Test Mode in Smartphones. Retrieved from [FSU Repository](https://repository.lib.fsu.edu/islandora/object/fsu%3A175931/datastream/PDF/view)