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.

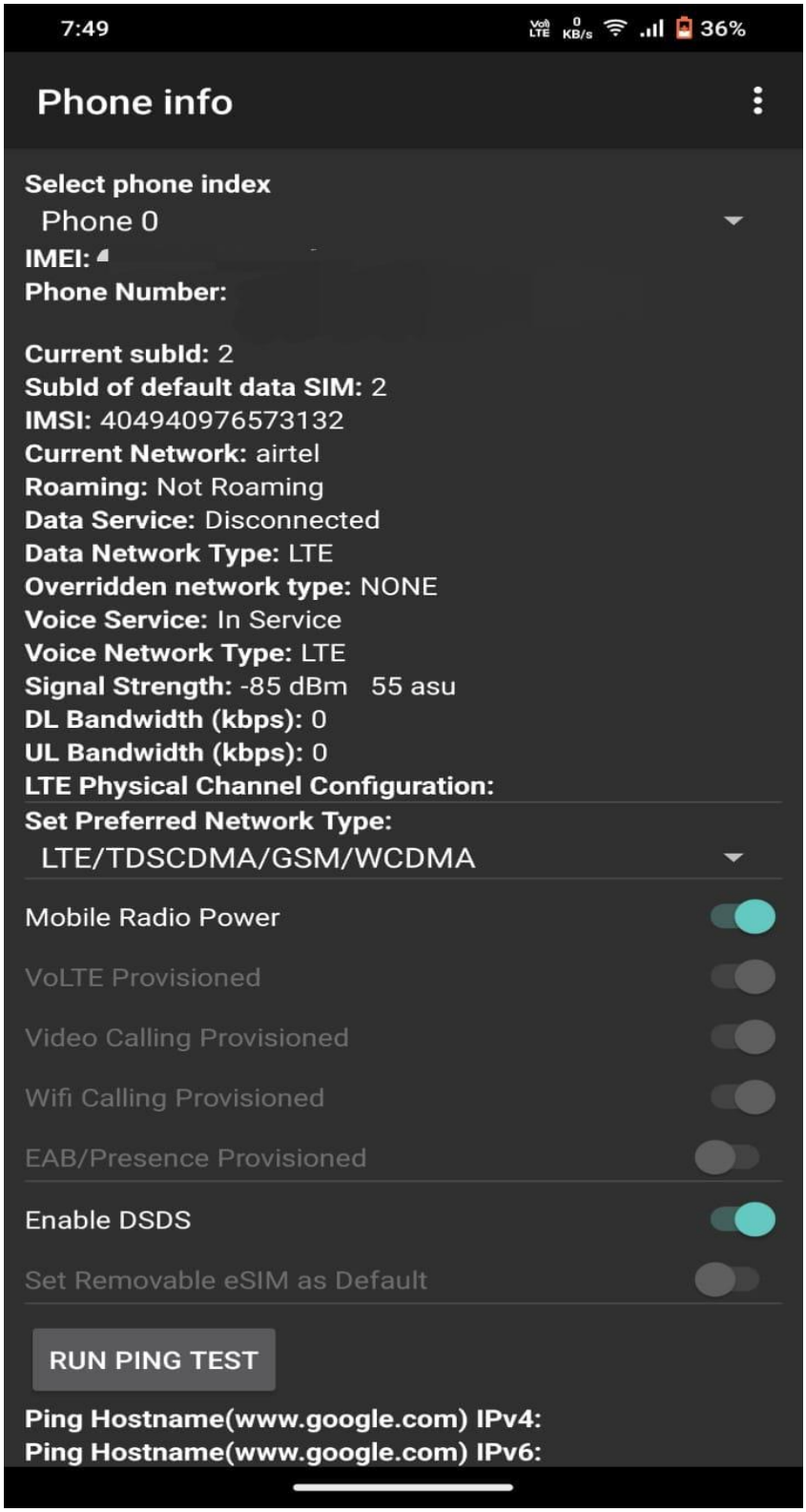
Signal Strength (Measured in dBm):

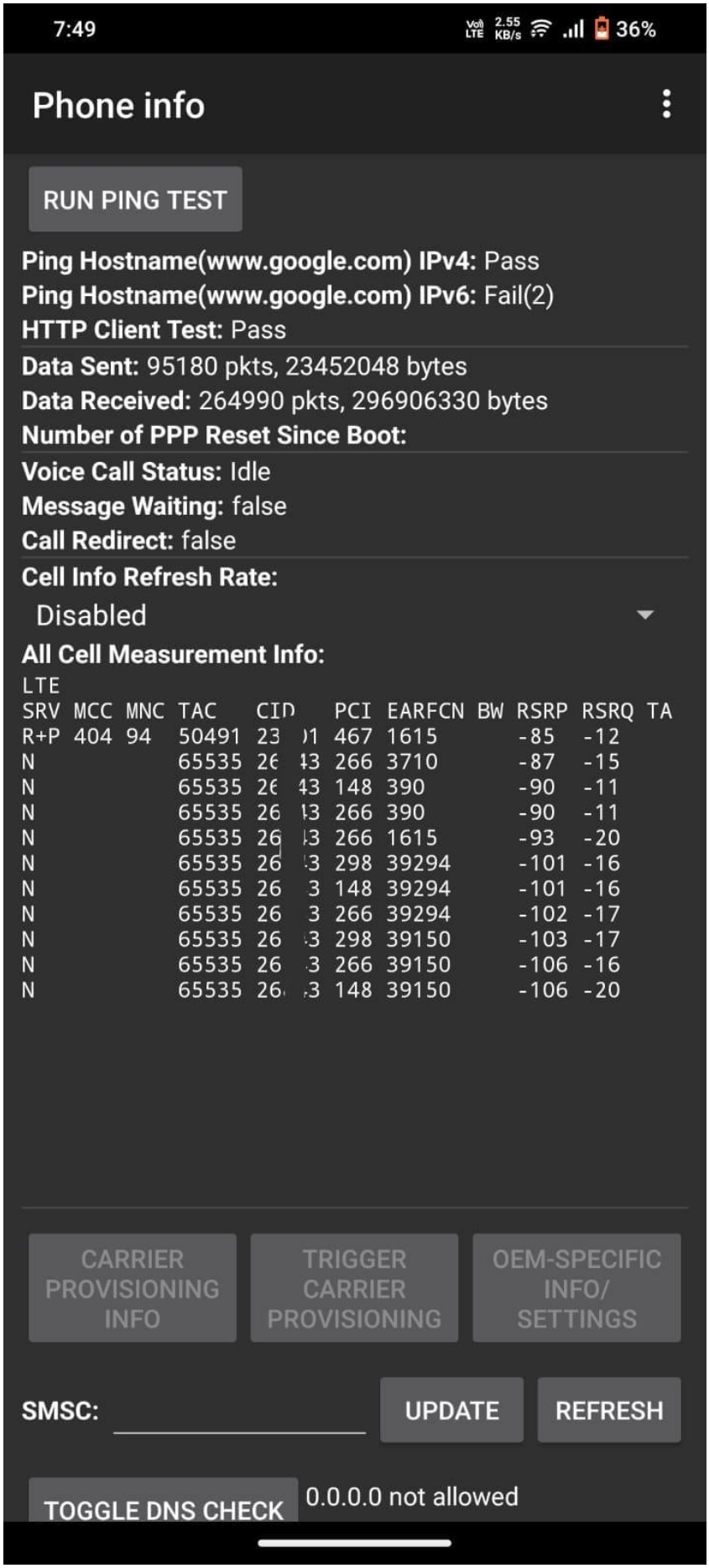
Indicates the quality of the network connection, with higher (less negative) values representing better quality.

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

Identifies the cell tower connection for tracking and performance analysis.

5.Screenshots:




7:49
2.55 KB/s
36%
Phone info
RUN PING TEST
Ping Hostname(www.google.com) IPv4: Pass
Ping Hostname(www.google.com) IPv6: Fail(2)
HTTP Client Test: Pass
Data Sent: 95180 pkts, 23452048 bytes
Data Received: 264990 pkts, 296906330 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 50491 23 01 467 1615 -85 -12
N 65535 26 43 266 3710 -87 -15
N 65535 26 43 148 390 -90 -11
N 65535 26 43 266 390 -90 -11
N 65535 26 43 266 1615 -93 -20
N 65535 26 3 298 39294 -101 -16
N 65535 26 3 148 39294 -101 -16
N 65535 26 3 266 39294 -102 -17
N 65535 26 3 298 39150 -103 -17
N 65535 26 3 266 39150 -106 -16
N 65535 26 3 148 39150 -106 -20
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

Waveform. (n.d.). Field Test Mode Guide. Retrieved from [Waveform](https://www.waveform.com/a/b/guides/field-test-guide)

Signal Booster. (n.d.). Field Test Mode Overview. Retrieved from [Signal Booster](https://www.signalbooster.com/pages/field-test-mode)

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)