CASE STUDY :- EXPLORING FIELD TEST MODE ON A VIVO V27

OBJECTIVE :-

The objective of this case study is to explore and understand key networking information using Field Test Mode on the VIVO V27 smartphone. The data collected will help evaluate network performance, signal strength, bandwidth, and other critical metrics that contribute to the overall performance of the device on its network.

1. DEVICE TYPE COVERED :-
   * VIVO V27 (Android)

2. KEY INFORMATION COLLECTED :-

(i) IMEI NUMBER (International Mobile Equipement Identity) :-

* The IMEI uniquely identifies the devices on the cellular network.

(ii) MAC ADDRESS (Media Access Control Address) :-

* The MAC address identifies the device on the local network such as Wi-Fi.

* Randomized MAC Address : De:::::19:08

(iii) IP ADDRESS (Internet Protocol Address):

* This is used for communication over the internet

* The IP address was not directly available in the data bt can be accessed through Field Test Mode (or) Wi-Fi settings.

(iv) NETWORK OPERATOR / BRAND :-

* The phone is connected to Jio's mobile network.

* The network operator provides cellular services.

(v) NETWORK TYPE :-

* LTE (4G)

* This connection supports moderate to high-speed data transfer.

(vi) SIGNAL STRENGTH :-

* Signal strength is measured in dBm. A lower value (closer to zero) indicates a better signal.

* Signal Strength :- 108 dBm, (32 asu) (This indicates a relatively weak signal, which may impact data speeds & call quality)

(vii) DOWNLOAD / UPLOAD BANDWIDTH :-

* The bandwidth reflects the data transfer speeds

* DOWNLOAD BANDWIDTH :- 248498 kbps

* UPLOAD BANDWIDTH :- 15000 kbps

(viii) MOBILE LOCATION INFORMATION (TAC / CID) :-

* These codes help identify the specific cell tower the device is connected to.

* TAC (Tracking Area Code) : 119

* CID (Cell ID) :- 12726

* MCC / MNC :- 405 / 869

3. STEPS TO ACCESS FIELD TEST MODE ON VIVO V27 :-

* Open the phone dialer on the VIVO V27
* Enter *#*# 4636#*#* to access the Testing Menu
* Select "Phone Information" to view network details such as IMEI, Signal Strength, and network type.
* Navigate to "Wi-Fi Information" for data like MAC address & IP address
* Use screenshots to capture relevant network details, such as signal strength & location information.

4. ANALYSIS OF COLLECTED DATA :-

From the VIVO V27, the following insights were gathered :-

(i) SIGNAL STRENGTH :-

At -108 dBm, the signal strength is weak, which may

affect the phone's ability to maintain strong internet connectivity, resulting in slower download / uploads speeds & potential call quality degradation. Improvements in signal strength could enchance the overall esperience.

(ii) NETWORK TYPE :-

The device is connected to a 4G LTE network. While LTE generally provides good data speeds, the weak signals limits its full potential. The available bandwidth suggests the network is capable of handling substantial data, Improvements in Signal strength would enchance the overall experience.

(iii) IMEI, MAC and IP Address :-

These values are critical for identifying the device on cellular & Wi-Fi networks. The IMEI helps the network track the device, while the MAC & IP address handle

internet and local network communication..

(iv) MOBILE LOCATION INFORMATION CLAC/CID) :-

The LAC and CID provide insight into the cell tower the phone is connected to. In this case, the device is connected to a Jio 4G network with specific tower codes, which helps in diagnosing network performance in specific areas.

5. IMPORTANCE OF NETWORKING INFORMATION :-

(i) SIGNAL STRENGTH :-

Signal Strength is critical for determining network performance. In this case, a value of -108 dbm suggests that improving signal coverage could enchance both internet speeds & voice call quality.

(ii) NETWORK TYPES :-

Knowing the network type is essential for understanding

affect the phone's ability to maintain strong internet connectivity, resulting in slower download / uploads speeds & potential call quality degradation. Improvements in signal strength could enchance the overall experience.

(ii) NETWORK TYPE :-

The device is connected to a 4G LTE network. While LTE generally provides good data speeds, the weak signals limits its full potential. The available bandwidth suggests the network is capable of handling substantial data, Improvements in Signal strength would enchance the overall experience.

(iii) IMEI, MAC and IP Address :-

These values are critical for identifying the device on cellular & Wi-Fi networks. The IMEI helps the network track the device, while the MAC & IP address handle

the data speed capabilities. While 4G LTE can handle typical usage like browsing & streaming, weak signals may degrade performance.

(iii) LOCATION INFORMATION (LAC | CID):-

* These codes assists in identifying which cell tower the device is connected to. This can be useful for diagnosing whether certain towers are underperforming (or) if there are network gaps in specific locations.

6. CONCLUSION :-

This case study on the VIVO V27 highlights the importance of understanding and interpreting key network parameters using diagnostic tools like Field Test Mode. While the device is connected to a 4G LTE network, the weak signal strength of -108 dBm limits its performance. Improvements in signal strength or

moving to areas with better coverage could significantly enchance the user escperience on this device.

Screenshots to capture relevant network details, such as signal strength and mobile location information: