

S. #.	Operator	Motorways / Highways / Inter Cities Roads	
		Count	Names
			to Mirpur Khas, Karachi to Nawabshah, Sukkur to Nawabshah, Sukkur to Larkana
4.	ZonG	16	GT Road Peshawar to Rawalpindi, Rawalpindi to Attock, Rawalpindi to Chakwal, Lahore to Mianwali, Lahore to Narowal, Lahore to Pattoki, Lahore to Multan, Multan to Abdul Hakeem, Multan to Bahawalpur, Multan to Kot Addu, Hyderabad to Badin, Hyderabad to Mirpur Khas, Karachi to Nawabshah, Karachi to Sanghar, Sukkur to Nawabshah, Sukkur to Larkana

**Table 6.3: Compliance of SMS End-To-End Delivery Time  $\leq$  12 Seconds**

- ii. **NON-COMPLIANCE.** The Motorways / Highways / Inter Cities Roads where CMOs remained non-compliant is mentioned in **Table 6.4: Non-Compliance of SMS End-To-End Delivery Time  $\leq$  12 Seconds.**

S. #.	Operator	Motorways / Highways / Inter Cities Roads	
		Count	Names
1.	Jazz	3	Lahore to Narowal, Lahore to Multan, Karachi to Sanghar
2.	Telenor	7	GT Road Peshawar to Rawalpindi, Rawalpindi to Attock, Rawalpindi to Chakwal, Lahore to Mianwali, Lahore to Narowal, Multan to Bahawalpur, Multan to Kot Addu
3.	Ufone	7	GT Road Peshawar to Rawalpindi, Rawalpindi to Chakwal, Lahore to Narowal, Lahore to Pattoki, Lahore to Multan, Hyderabad to Badin, Karachi to Sanghar

**Table 6.4: Non-Compliance of SMS End-To-End Delivery Time  $\leq$  12 Seconds**

## **SURVEY MAPS & GRAPHICAL RESULTS**

7.1 The 4G/LTE Signal Strength (RSRP) samples recorded during drive test on survey routes plotted on maps along-with Voice & SMS QoS KPIs survey results in graphical form are placed at **Annex-A, Annex-B & Annex-C** on Motorways / Highways and Inter-Cities Roads of Punjab, Sindh & Khyber Pakhtunkhwa respectively.

## **STANDING IN SURVEY**

8.1. CMOs have been prioritized/ placed at 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> & 4<sup>th</sup> position in each category i.e. Mobile Network Coverage, Mobile Broadband Service, Voice Service and SMS Service, based upon the compliance level against each QoS KPI in each category in surveyed Motorways / Highways / Inter Cities Roads.

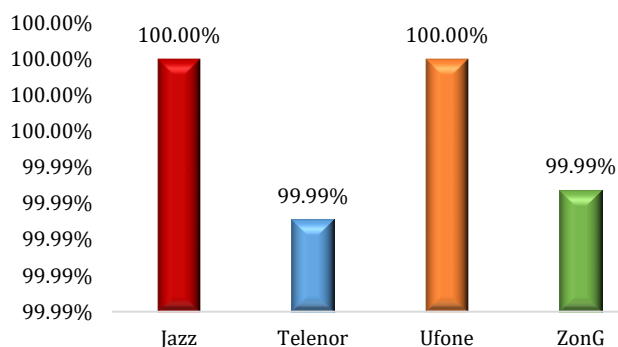
- a. **MOBILE NETWORK COVERAGE.** The categorization of CMOs as per QoS KPI i.e. Signal Strength of 4G/LTE and 3G Networks on Surveyed Motorways / Highways and Inter Cities Roads is shown in **Table 8.1: CMOs Standing in Mobile Network Coverage.**

S. #.	Operator	Compliance Level – Number of Motorways / Highways / Inter Cities Roads		Standing
		Compliant	Non-Compliant	
1.	ZonG	28	4	1 <sup>st</sup>
2.	Jazz	22	10	2 <sup>nd</sup>
3.	Telenor	20	12	3 <sup>rd</sup>
4.	Ufone	19	13	4 <sup>th</sup>

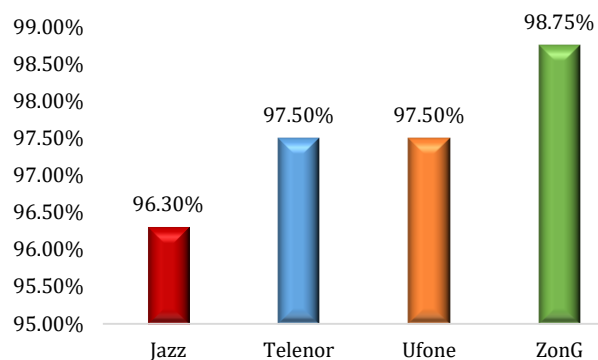
**Table 8.1: CMOs Standing in Mobile Network Coverage**

## QUALITY OF SERVICE SURVEY RESULTS – KARACHI TO SANGHAR

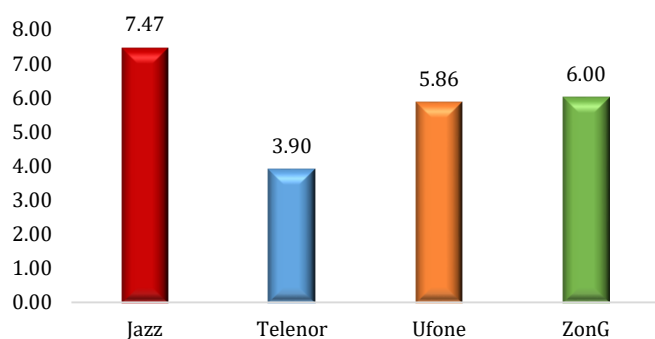
**Network Accessibility > 99%**



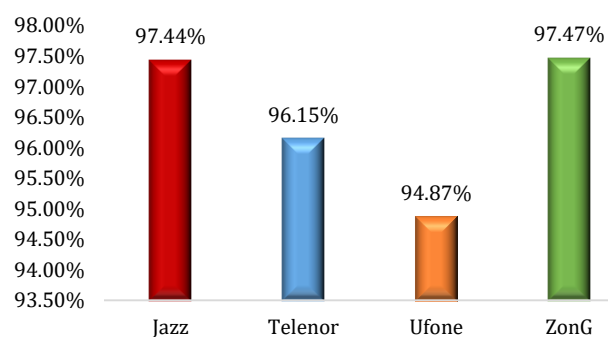
**Service Accessibility > 98%**



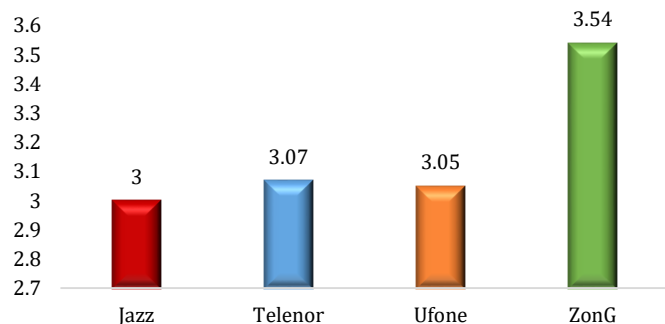
**Call Connection Time < 6.5 Seconds**



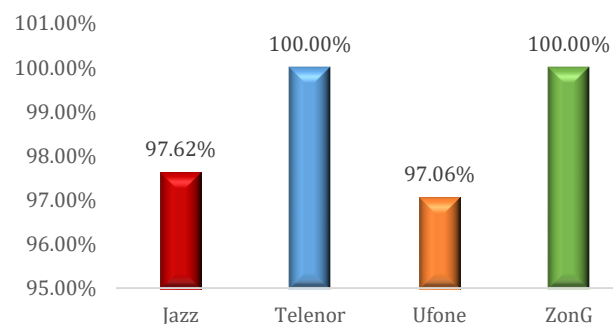
**Call Completion Ratio > 98%**



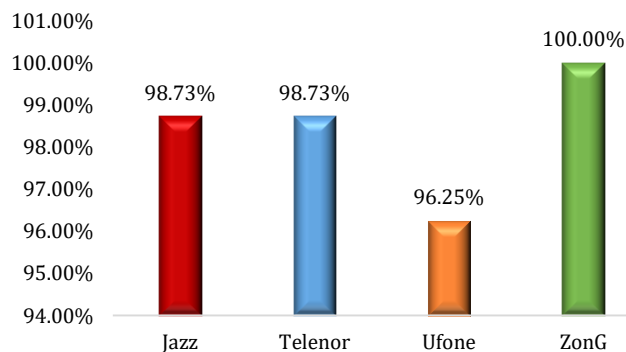
**Mean Opinion Score > 3**



**ISHO for Circuit Switched Voice > 98%**



**SMS Success Rate > 99%**



**SMS End-to-End Delivery Time < 12 Seconds**

