

### 3. KEY PERFORMANCE INDICATORS (KPIs)

As per Cellular Mobile Network Quality of Service (QoS) Regulations 2021, all CMOs are required to meet or exceed the benchmark of QoS KPIs as shown in Table 3.1: QoS KPIs

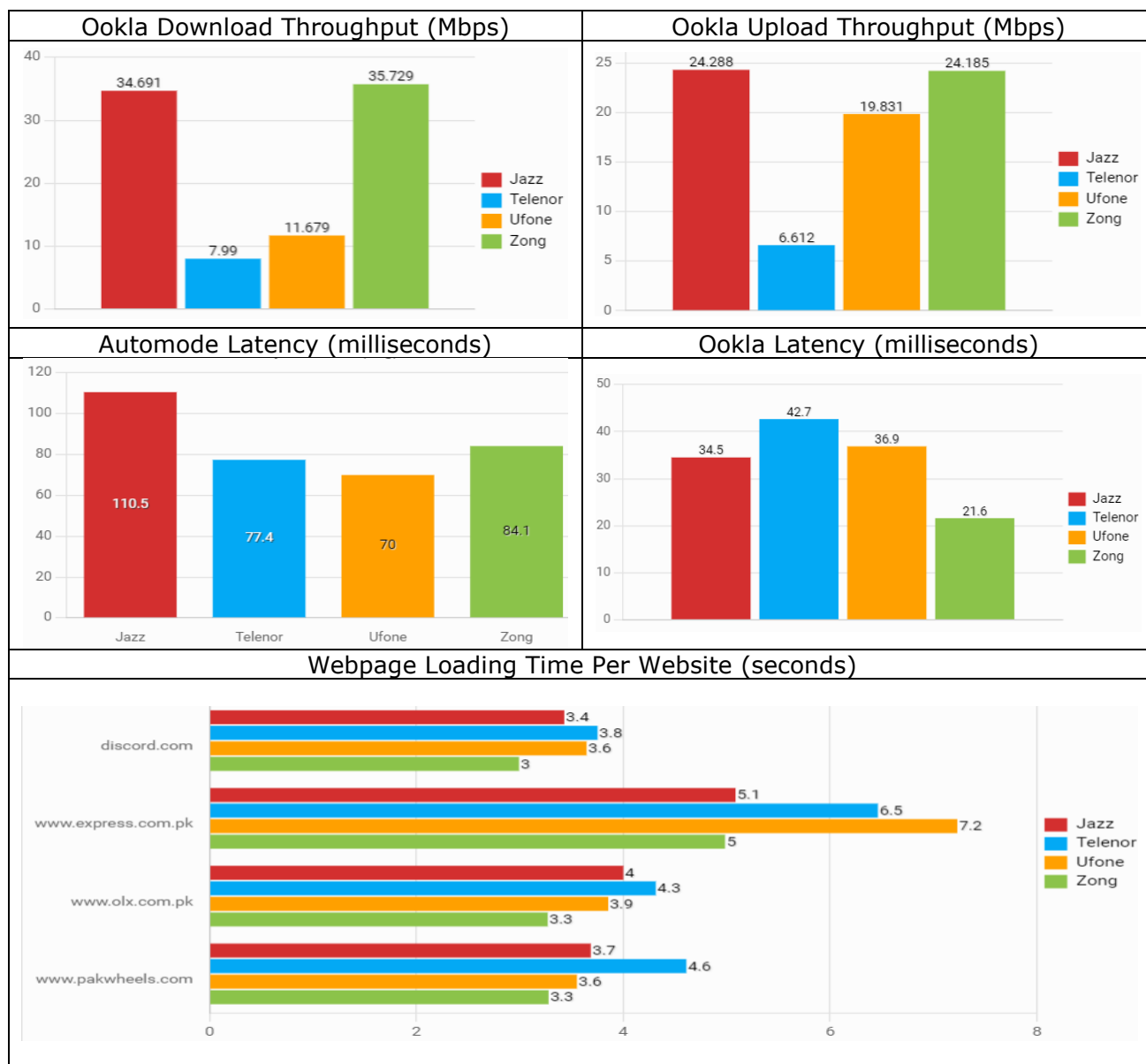
Key Performance Indicators			Threshold Value
<b>Voice</b>	Network Accessibility		$\geq 99\%$
	Call Setup Success Rate		$\geq 98\%$
	Call Connection Time		$< 7.5$ Seconds
	Call Completion Ratio		$> 98\%$
	Mean Opinion Score		$> 3$
	ISHO for CS Voice		$\geq 98\%$
	RAB Setup Success Rate		$\geq 98\%$
<b>SMS</b>	SMS Success Rate		$\geq 99\%$
	SMS End-to-End Delivery Time		$\leq 12$ Seconds
<b>Data (Automode)</b>	Latency		$< 75$ ms
	Webpage Loading Time		$< 5$ Seconds
	Download Throughput		$> 4$ Mbps
	Download Throughput		$> 1$ Mbps
<b>Network Coverage</b>	Signal Strength (RSRP)	Signal Level	Minimum -100dBm
		Confidence Level	$> 90\%$
	Signal Strength (RSCP)	Signal Level	Minimum -100dBm
		Confidence Level	$> 90\%$

Table 3.1: QoS KPIs

### 4. NETWORK COVERAGE – 4G

During the survey, while conducting data test in technology auto detect mode, 4G/LTE signal strength samples were recorded on survey routes. City wise compliance of 90% Confidence Level of signal strength is shown in Table 4.1: 4G Signal Confidence Level- Technology Auto Detect Mode.

4G Signal Confidence Level- Technology Auto Detect Mode								
City	Confidence Level (%)				Compliant (Yes/No)			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
BAHWALNAGAR	99.22	<b>76.63</b>	99.39	99.61	Yes	<b>No</b>	Yes	Yes
D.I KHAN	91.4	96.46	98.65	92.2	Yes	Yes	Yes	Yes
LAHORE	98.20	<b>85.16</b>	99.51	99.57	Yes	<b>No</b>	Yes	Yes
MARDAN	97.58	95.71	99.10	99.89	Yes	Yes	Yes	Yes
SAMUNDARI	98.00	95.00	100	99.00	Yes	Yes	Yes	Yes
SHIKARPUR	96.35	<b>79.63</b>	99.47	99.73	Yes	<b>No</b>	Yes	Yes
HYDERABAD	98.91	<b>87.21</b>	96.81	99.40	Yes	<b>No</b>	Yes	Yes
JHELMUM	97.11	<b>79.96</b>	99.17	97.74	Yes	<b>No</b>	Yes	Yes
KARACHI MALIR	97.87	<b>87.38</b>	98.06	93.43	Yes	<b>No</b>	Yes	Yes
NAWABSHAH	98.59	<b>84.24</b>	98.06	99.84	Yes	<b>No</b>	Yes	Yes
NUSHKI	N/A	<b>89.02</b>	94.47	95.09	N/A	<b>No</b>	Yes	Yes
QUETTA	99.64	90.10	99.75	99.29	Yes	Yes	Yes	Yes



## 9. VOICE SERVICE

A total of 20,485 Call attempts were made and out of which 339 were failed attempts. In 20,146 successful call attempts, 143 calls dropped prior to completion of two minutes duration, whereas, 20,003 calls remained connected for the complete duration of two minutes. The 5 x QoS KPIs (i.e. Network Accessibility, Call Setup Success Rate, Call Setup Time, Call Completion Rate and Mean Opinion Score) have been measured while testing voice services in the surveyed cities. Company wise call statistics is shown in [Table 9.1: Call Statistics](#), while the compliance in each surveyed city is shown in [Table 9.2: Voice QoS KPIs Compliance Level](#), [Table 9.3: Voice QoS KPIs Compliance Level](#) and [Table 9.4: Voice QoS KPIs Compliance Level](#)