

<i>Haripur To Taxila</i>	<b>56.56%</b>	<b>76.36%</b>	<b>85.62%</b>	<b>67.35%</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>Pindi Bhatian To Multan</i>	<b>N/A</b>	100.00%	95.85%	100.00%	<b>N/A</b>	Yes	Yes	Yes
<i>Multan to Sukkur</i>	<b>N/A</b>							
<i>Nowshera To Chitral</i>	91.36%	91.36%	90.10%	91.44%	Yes	Yes	Yes	Yes
<i>Swabi To Katlang</i>	<b>N/A</b>	100.00%	98.24%	100.00%	<b>N/A</b>	Yes	Yes	Yes
<i>Islamabad To Kohala</i>	99.74%	100.00%	96.12%	<b>N/A</b>	Yes	Yes	Yes	<b>N/A</b>
<i>Islamabad To Peshawar</i>	<b>80.14%</b>	<b>84.65%</b>	92.80%	<b>88.05%</b>	<b>No</b>	<b>No</b>	Yes	<b>No</b>
<i>Lahore to Abdul Hakeem</i>	<b>N/A</b>	100.00%	95.38%	100.00%	<b>N/A</b>	Yes	Yes	Yes
<i>Lahore to Islamabad</i>	99.68%	98.75%	96.95%	94.74%	Yes	Yes	Yes	Yes
<i>Lahore To Sialkot</i>	98.90%	99.30%	<b>N/A</b>	98.35%	Yes	Yes	<b>N/A</b>	Yes
<i>Rawalpindi To Turkham</i>	<b>87.38%</b>	<b>89.81%</b>	93.05%	<b>86.49%</b>	<b>No</b>	<b>No</b>	Yes	<b>No</b>

**Table 3.3: 3G Signal Strength Technology Auto Detect Mode -100 dBm with 90% Confidence Level**

<b>3G Signal Strength -100dBm with 90% Confidence Level – Technology Locked Mode</b>								
<b>Road Name</b>	<b>Operators</b>				<b>Compliant (Yes/No)</b>			
	<b>Jazz</b>	<b>Telenor</b>	<b>Ufone</b>	<b>ZonG</b>	<b>Jazz</b>	<b>Telenor</b>	<b>Ufone</b>	<b>ZonG</b>
<i>Hazara Motorway</i>	<b>87.81%</b>	93.83%	91.90%	95.90%	<b>No</b>	Yes	Yes	Yes
<i>Haripur To Taxila</i>	<b>73.26%</b>	97.81%	93.90%	97.51%	<b>No</b>	Yes	Yes	Yes
<i>Pindi Bhatian To Multan</i>	99.98%	100.00%	95.09%	99.93%	Yes	Yes	Yes	Yes
<i>Multan to Sukkur</i>	96.90%	97.76%	<b>69.19%</b>	98.66%	Yes	Yes	<b>No</b>	Yes
<i>Nowshera To Chitral</i>	<b>84.74%</b>	98.14%	<b>89.87%</b>	97.25%	<b>No</b>	Yes	<b>No</b>	Yes
<i>Swabi To Katlang</i>	<b>82.41%</b>	99.92%	95.47%	98.42%	<b>No</b>	Yes	Yes	Yes
<i>Islamabad To Kohala</i>	92.94%	98.15%	95.79%	99.75%	Yes	Yes	Yes	Yes
<i>Islamabad To Peshawar</i>	95.14%	99.33%	100.00%	99.81%	Yes	Yes	Yes	Yes
<i>Lahore to Abdul Hakeem</i>	99.95%	100.00%	94.13%	100.00%	Yes	Yes	Yes	Yes
<i>Lahore to Islamabad</i>	99.60%	98.17%	99.73%	99.67%	Yes	Yes	Yes	Yes
<i>Lahore To Sialkot</i>	100.00%	100.00%	99.90%	100.00%	Yes	Yes	Yes	Yes
<i>Rawalpindi To Turkham</i>	98.01%	97.71%	97.33%	98.04%	Yes	Yes	Yes	Yes

**Table 3.4: 3G Signal Strength Technology Locked Mode -100 dBm with 90% Confidence Level**

## **MOBILE BROADBAND SERVICE**

4.1. **DATA SESSIONS IN TECHNOLOGY AUTO DETECT MODE & LOCKED MODE.** A series of data tests including Capacity Tests, Data Transfer Tests, Web Browsing and Ping were carried out wherein Key Performance Indicators (KPIs) of Upload and Download User Data Throughput (i.e. Speed), Webpage Loading Time and Latency have been measured. In Fixed Duration Testing, a File of 10GB was downloaded and Uploaded for 3 minutes duration whereas in Fixed Size Testing, a File of 5MB and 2MB was completely downloaded and uploaded respectively. In order to measure Webpage Loading Time, different national webpages were checked and in case of Latency international and national host were pinged to measure Round Trip Time (RTT)/Latency. The 4G/LTE, 3G and 2G signal strength, Number of Tests, Upload and Download User Data Throughput, Webpage Loading Time and Latency detail is mentioned in **Table 4.1: Data Tests Statistics**.

<b>DOWNLOAD USER DATA THROUGHPUT IN TECHNOLOGY AUTO DETECT MODE (FIXED DURATION)</b>								
<b>Road</b>	<b>User Data Throughput [Mbps]</b>				<b>Operator Position</b>			
	<b>Jazz</b>	<b>Telenor</b>	<b>Ufone</b>	<b>ZonG</b>	<b>Jazz</b>	<b>Telenor</b>	<b>Ufone</b>	<b>ZonG</b>
<i>Hazara Motorway</i>	16.95	4.60	15.66	11.50	First	Fourth	Second	Third
<i>Quetta To Karachi</i>	6.66	3.58	5.16	5.76	First	Fourth	Third	Second
<i>Haripur To Taxila</i>	12.04	2.97	11.64	10.67	First	Fourth	Second	Third
<i>Pindi Bhatian To Multan</i>	9.43	3.78	17.01	14.27	Third	Fourth	First	Second
<i>Multan to Sukkur</i>	6.53	4.00	15.30	8.97	Third	Fourth	First	Second
<i>Nowshera To Chitral</i>	17.17	3.26	15.90	15.81	First	Fourth	Second	Third
<i>Swabi To Katlang</i>	18.82	2.95	2.31	6.28	First	Third	Fourth	Second
<i>Islamabad To Kohala</i>	16.20	5.47	10.59	17.95	Second	Fourth	Third	First
<i>Islamabad To Peshawar</i>	15.89	6.13	15.83	17.65	Second	Fourth	Third	First
<i>Lahore to Abdul Hakeem</i>	9.31	2.51	2.48	13.77	Second	Third	Fourth	First
<i>Lahore to Islamabad</i>	15.42	6.20	19.08	24.83	Third	Fourth	Second	First
<i>Lahore To Sialkot</i>	7.84	<b>1.85</b>	2.68	9.20	Second	<b>Fourth</b>	Third	First
<i>Rawalpindi To Turkham</i>	13.09	4.79	8.02	14.10	Second	Fourth	Third	First

**Table4.2: Download User Data Throughput Technology Auto Detect Mode [Fixed Duration] ≥ 2Mbps**

<b>DOWNLOAD USER DATA THROUGHPUT IN TECHNOLOGY AUTO DETECT MODE (FIXED SIZE)</b>								
<b>Road</b>	<b>User Data Throughput [Mbps]</b>				<b>Operator Position</b>			
	<b>Jazz</b>	<b>Telenor</b>	<b>Ufone</b>	<b>ZonG</b>	<b>Jazz</b>	<b>Telenor</b>	<b>Ufone</b>	<b>ZonG</b>
<i>Hazara Motorway</i>	9.21	5.02	11.33	8.70	Second	Fourth	First	Third
<i>Quetta To Karachi</i>	2.59	2.18	3.00	2.98	Third	Fourth	First	Second
<i>Haripur To Taxila</i>	8.58	3.75	8.48	9.06	Second	Fourth	Third	First
<i>Pindi Bhatian To Multan</i>	7.78	4.37	10.14	8.79	Third	Fourth	First	Second
<i>Multan to Sukkur</i>	6.61	4.94	10.24	7.33	Third	Fourth	First	Second
<i>Nowshera To Chitral</i>	6.12	4.06	8.66	9.36	Third	Fourth	Second	First
<i>Swabi To Katlang</i>	9.67	2.36	3.09	6.20	First	Fourth	Third	Second
<i>Islamabad To Kohala</i>	10.66	6.25	7.83	10.46	First	Fourth	Third	Second
<i>Islamabad To Peshawar</i>	9.70	5.98	8.06	10.19	Second	Fourth	Third	First
<i>Lahore to Abdul Hakeem</i>	6.75	4.05	3.14	6.75	Second	Third	Fourth	First
<i>Lahore to Islamabad</i>	8.64	5.52	11.34	12.42	Third	Fourth	Second	First
<i>Lahore To Sialkot</i>	5.83	3.56	3.37	6.87	Second	Third	Fourth	First
<i>Rawalpindi To Turkham</i>	7.10	4.27	6.30	6.99	First	Fourth	Third	Second

**Table4.3: Download User Data Throughput Technology Auto Detect Mode [Fixed Size] ≥ 2Mbps**

<b>DOWNLOAD USER DATA THROUGHPUT IN 4G/LTE TECHNOLOGY LOCKED MODE (FIXED DURATION)</b>								
<b>Road</b>	<b>User Data Throughput [Mbps]</b>				<b>Operator Position</b>			
	<b>Jazz</b>	<b>Telenor</b>	<b>Ufone</b>	<b>ZonG</b>	<b>Jazz</b>	<b>Telenor</b>	<b>Ufone</b>	<b>ZonG</b>
<i>Hazara Motorway</i>	10.58	<b>1.12</b>	18.06	10.32	Second	<b>Fourth</b>	First	Third
<i>Haripur To Taxila</i>	7.29	<b>0.58</b>	<b>0.94</b>	9.80	Second	<b>Fourth</b>	<b>Third</b>	First
<i>Pindi Bhatian To Multan</i>	8.31	2.12	15.90	9.50	Third	Fourth	First	Second
<i>Multan to Sukkur</i>	3.73	2.45	14.70	6.19	Third	Fourth	First	Second
<i>Nowshera To Chitral</i>	10.38	<b>1.52</b>	8.70	10.91	Second	<b>Fourth</b>	Third	First
<i>Swabi To Katlang</i>	19.35	<b>1.04</b>	9.33	5.45	First	<b>Fourth</b>	Second	Third
<i>Islamabad To Kohala</i>	8.49	2.12	2.57	<b>0.26</b>	First	Third	Second	<b>Fourth</b>
<i>Islamabad To Peshawar</i>	6.08	2.22	4.64	5.22	First	Fourth	Third	Second
<i>Lahore to Abdul Hakeem</i>	5.84	<b>1.70</b>	13.40	9.51	Third	<b>Fourth</b>	First	Second
<i>Lahore to Islamabad</i>	10.06	4.34	16.84	16.16	Third	Fourth	First	Second
<i>Lahore To Sialkot</i>	2.86	<b>1.65</b>	10.38	7.10	Third	<b>Fourth</b>	First	Second