UPLOAD USER DATA THROUGHPUT IN TECHNOLOGY AUTO DETECT MODE (FIXED DURATION)								
City	Upload User Data Throughput [Kbps]				Operator Position			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
BUNER	12076.96	6402.05	11474.17	14910.37	Second	Fourth	Third	First
JACOBABAD	21392.15	5395.46	20752.6	24100.5	Second	Fourth	Third	First
SUJAWAL	30264.2	8667.95	24412.42	26721.56	First	Fourth	Third	Second
MITHI	27408.96	5363.88	21042.25	14055.58	First	Fourth	Second	Third
ABBOTTABAD	24644.38	5952.18	16826.93	16966.41	First	Fourth	Third	Second
SHUJABAD	18676.77	4130.71	10026.45	20404.5	Second	Fourth	Third	First
SWABI	16598.01	4779.99	15172.14	17896.14	Second	Fourth	Third	First
MURIDKE	27363.76	8960.83	19725.39	23908.06	First	Fourth	Third	Second

Table 4.4: Upload User Data Throughput Technology Auto Detect Mode [Fixed Duration] $\geq$ 768Kbps

UPLOAD USER DATA THROUGHPUT IN TECHNOLOGY AUTO DETECT MODE (FIXED SIZE)								
City	Upload User Data Throughput [Kbps]				Operator Position			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
UPPER DIR	4927.35	3068.89	5575.65	5381.32	Third	Fourth	First	Second
LARKANA	6606.51	4256.48	7313.52	6148.18	Second	Fourth	First	Third
LAHORE	7698.76	5448.96	7130.36	6750.15	First	Fourth	Second	Third
KHAIRPUR	6051.87	5106.27	6749.1	6724.66	Third	Fourth	First	Second
KAHROR PACCA	7344.14	3887.46	5608.74	5704.35	First	Fourth	Third	Second
SHAHKOT	8255.79	3669.27	7264.38	7217.23	First	Fourth	Second	Third
GUJAR KHAN	8416.55	4617.48	7797.97	6288.04	First	Fourth	Second	Third
WAH/ TAXILA	6595.94	4806.2	6713.08	7549.82	Third	Fourth	Second	First
RAWALPINDI	7460.44	4827.62	7021.3	8039.07	Second	Fourth	Third	First
BUNER	6027.38	4254.6	5553.95	5629.37	First	Fourth	Third	Second
JACOBABAD	6513.63	3991.51	6460.68	6941.84	Second	Fourth	Third	First
SUJAWAL	8739.95	5786.09	7771.44	7785.5	First	Fourth	Third	Second
MITHI	7910.93	3836.52	7066.35	5297.96	First	Fourth	Second	Third
ABBOTTABAD	6948.94	4392.97	6117.5	7318.75	Second	Fourth	Third	First
SHUJABAD	6214.58	3394.36	5405.01	5699.26	First	Fourth	Third	Second
SWABI	5912.57	3846.93	5942.12	6338.53	Third	Fourth	Second	First
MURIDKE	6260.61	5286.31	6539.18	6778.73	Third	Fourth	Second	First

Table 4.5: Upload User Data Throughput Technology Auto Detect Mode [Fixed Size] $\geq$ 768Kbps

4.4.   WEBPAGE LOADING TIME. As per Cellular Mobile Network Quality of Service (QoS) Regulations 2021, licensees are required to meet Webpage Loading Time threshold of 5 Seconds. The results of Webpage Loading Time are shown in **Table 4.6: Webpage Loading Time < 5 Seconds.**

WEBPAGE LOADING TIME IN IN TECHNOLOGY AUTO DETECT MODE								
City	Webpage Loading Time [seconds]				Compliant (Yes/No)			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
UPPER DIR	3.60	3.59	3.78	3.05	Yes	Yes	Yes	Yes
LARKANA	2.42	2.98	3.37	2.82	Yes	Yes	Yes	Yes
LAHORE	2.84	2.72	3.02	2.41	Yes	Yes	Yes	Yes
KHAIRPUR	2.50	2.70	3.20	2.70	Yes	Yes	Yes	Yes
KAHROR PACCA	2.57	3.58	3.73	2.61	Yes	Yes	Yes	Yes
SHAHKOT	2.41	3.01	2.31	2.17	Yes	Yes	Yes	Yes
GUJAR KHAN	3.12	3.03	3.28	2.92	Yes	Yes	Yes	Yes

WEBPAGE LOADING TIME IN IN TECHNOLOGY AUTO DETECT MODE								
City	Webpage Loading Time [seconds]				Compliant (Yes/No)			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
WAH/ TAXILA	3.05	3.34	2.72	3.05	Yes	Yes	Yes	Yes
RAWALPINDI	2.87	2.90	2.89	2.91	Yes	Yes	Yes	Yes
BUNER	2.78	3.02	2.73	2.69	Yes	Yes	Yes	Yes
JACOBABAD	2.40	2.80	3.40	2.40	Yes	Yes	Yes	Yes
SUJAWAL	2.07	2.65	3.02	2.29	Yes	Yes	Yes	Yes
MITHI	2.01	2.90	3.05	2.61	Yes	Yes	Yes	Yes
ABBOTTABAD	2.79	2.71	2.56	3.01	Yes	Yes	Yes	Yes
SHUJABAD	2.95	2.98	3.04	2.90	Yes	Yes	Yes	Yes
SWABI	2.87	2.68	3.31	3.18	Yes	Yes	Yes	Yes
MURIDKE	3.09	2.60	2.65	2.15	Yes	Yes	Yes	Yes

Table 4.6: Webpage Loading Time < 5 Seconds

4.5. **LATENCY.** As per Cellular Mobile Network Quality of Service (QoS) Regulations 2021, licensees are required to meet <u>threshold of 75 milliseconds of 4G/LTE Technology & 150 milliseconds of 3G Technology of Latency.</u> The results of QoS KPI Latency are shown in. **Table 4.7: Latency in Technology Auto Detect Mode < 75 milliseconds**.

LATENCY IN TECHNOLOGY AUTO DETECT MODE								
City	Latency [milliseconds]				Compliant (Yes/No)			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
UPPER DIR	182	96	90	127	No	No	No	No
LARKANA	68	70	43	57	Yes	Yes	Yes	Yes
LAHORE	63	52	55	47	Yes	Yes	Yes	Yes
KHAIRPUR	72	54	64	55	Yes	Yes	Yes	Yes
KAHROR PACCA	66	79	45	62	Yes	No	Yes	Yes
SHAHKOT	65	60	56	55	Yes	Yes	Yes	Yes
GUJAR KHAN	163	61	52	131	No	Yes	Yes	No
WAH/ TAXILA	101	68	52	88	No	Yes	Yes	No
RAWALPINDI	81	71	58	116	No	Yes	Yes	No
BUNER	219	69	116	108	No	Yes	No	No
JACOBABAD	96	51	56	50	No	Yes	Yes	Yes
SUJAWAL	44	38	31	47	Yes	Yes	Yes	Yes
MITHI	45	69	51	60	Yes	Yes	Yes	Yes
ABBOTTABAD	100	55	67	111	No	Yes	Yes	No
SHUJABAD	97	188	54	58	No	No	Yes	Yes
SWABI	154	66	91	104	No	Yes	No	No
MURIDKE	135	52	55	46	No	Yes	Yes	Yes

Table 4.7: Latency in Technology Auto Detect Mode < 75 milliseconds

4.6. **OOKLA SPEED TEST.** In addition, Ookla Speed Test was also carried out to measure Download and Upload User Data Throughput and Round-Trip Time/Latency. The Number of Tests, Upload and Download User Data Throughput and Latency detail is mentioned in **Table 4.8: Ookla Tests Statistics.** Whereas the City wise results of Ookla Download Throughout, Upload Throughput and Latency are shown in (i). **Table 4.9: Ookla Download Throughput in Technology Auto Detect Mode**, (ii). **Table 4.10: Ookla Upload Throughput in Technology Auto Detect Mode**, (iii) **Table 4.11 Ookla Latency in Technology Auto Detect Mode < 75 Milliseconds.**