

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
ISLAMABAD	2.54	2.87	2.58	2.71	Yes	Yes	Yes	Yes
JHANG	1.06	0.75	0.31	0.24	Yes	Yes	Yes	Yes
KHUSHAB	1.04	0.96	0.20	0.21	Yes	Yes	Yes	Yes
MUZAFARGARH	0.70	0.80	0.40	0.30	Yes	Yes	Yes	Yes
MIRPUR KHAS	4.40	6.80	6.20	4.90	Yes	No	No	Yes
NOWSHERA	2.35	6.34	2.73	2.26	Yes	No	Yes	Yes
OKARA	2.50	2.50	2.00	1.80	Yes	Yes	Yes	Yes
PESHAWAR	2.90	6.12	2.57	2.56	Yes	No	Yes	Yes
QUETTA	2.30	3.10	3.50	2.00	Yes	Yes	Yes	Yes
SEHWAN	4.60	5.90	7.00	4.90	Yes	No	No	Yes
THATTA	3.40	5.10	6.40	4.80	Yes	No	No	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 threshold of 75 milliseconds of 4G/LTE Technology & 150 milliseconds of 3G Technology of Latency. 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
BATTAGRAM	70	61	57	75	Yes	Yes	Yes	No
BESHAM	62	69	N/A	84	Yes	Yes	N/A	No
DADU	101	56	61	70	No	Yes	Yes	Yes
DASKA	90	61	54	53	No	Yes	Yes	Yes
DERA ALLAH YAR	53	74	66	41	Yes	Yes	Yes	Yes
GHOTKI	49	58	55	63	Yes	Yes	Yes	Yes
ISLAMABAD	58	68	81	142	Yes	Yes	No	No
JHANG	55	70	94	57	Yes	Yes	No	Yes
KHUSHAB	66	58	200	56	Yes	Yes	No	Yes
MUZAFARGARH	87	57	48	47	No	Yes	Yes	Yes
MIRPUR KHAS	76	95	35	34	No	No	Yes	Yes
NOWSHERA	67	72	75	75	Yes	Yes	No	No
OKARA	86	63	165	55	No	Yes	No	Yes
PESHAWAR	75	62	77	125	No	Yes	No	No
QUETTA	72	82	97	43	Yes	No	No	Yes
SEHWAN	61	51	38	45	Yes	Yes	Yes	Yes
THATTA	39	40	39	32	Yes	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 Throughput, 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.**

DESCRIPTION				JAZZ	TELENOR	Ufone	ZONG
Ookla Tests	THROUGHPUT TEST	DOWNLOAD	ATTEMPTS	10296	10397	10412	9826
			SPEED (Mbps)	35.085	5.71	10.565	26.891
		UPLOAD	ATTEMPTS	10296	10397	10412	9826
			SPEED (Mbps)	26.198	6.591	18.676	22.744
	PING TEST	ATTEMPTS		10296	10397	10412	9826
		LATENCY (msec)		35.3	44.6	38.5	50.4

Table 4.8: Ookla Tests Statistics

OOKLA DOWNLOAD THROUGHPUT IN TECHNOLOGY AUTO DETECT MODE								
Cities	Download Throughput (Mbps)				Operator Position			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
BATTAGRAM	28.7	1.9	12.1	24.85	First	Fourth	Third	Second
BESHAM	66	2.7	N/A	37.2	First	Third	N/A	Second
DADU	26.8	7	8	27.1	Second	Fourth	Third	First
DASKA	26.2	5.3	20.0	30.9	Second	Fourth	Third	First
DERA ALLAH YAR	26.3	5.8	6.09	20.11	First	Fourth	Third	Second
GHOTKI	22.8	9.3	6	19.6	First	Third	Fourth	Second
ISLAMABAD	36.27	3.27	9.4	21.54	First	Fourth	Third	Second
JHANG	47.31	11.54	5.88	29.76	First	Third	Fourth	Second
KHUSHAB	30.09	10.29	8.08	33.9	Second	Third	Fourth	First
MUZAFARGARH	22.3	19	7.93	31.63	Second	Third	Fourth	First
MIRPUR KHAS	36.2	7.1	13.4	27.75	First	Fourth	Third	Second
NOWSHERA	37.4	5.0	9.2	22.1	First	Fourth	Third	Second
OKARA	29.5	8.5	14.16	32.2	Second	Fourth	Third	First
PESHAWAR	30.6	4.2	6.5	20.0	First	Fourth	Third	Second
QUETTA	33.6	11.7	6.5	15.58	First	Third	Fourth	Second
SEHWAN	21.7	6.8	7.8	31.83	Second	Fourth	Third	First
THATTA	42.9	8.9	8.8	28.62	First	Third	Fourth	Second

Table 4.9: Ookla Download Throughput in Technology Auto Detect Mode

OOKLA UPLOAD THROUGHPUT IN TECHNOLOGY AUTO DETECT MODE								
Cities	Upload Throughput (Kbps)				Operator Position			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
BATTAGRAM	32.1	4.2	21.88	22.9	First	Fourth	Third	Second
BESHAM	28.8	4.6	N/A	16.8	First	Third	N/A	Second
DADU	25	3.6	16.8	31.8	Second	Fourth	Third	First
DASKA	18.5	5.3	17.2	27.6	Second	Fourth	Third	First
DERA ALLAH YAR	34.7	4.6	17.97	15.3	First	Fourth	Second	Third
GHOTKI	26	5.6	17.1	29	Second	Fourth	Third	First
ISLAMABAD	24.18	7.15	17.66	17.95	First	Fourth	Third	Second
JHANG	25.61	5.36	23.18	37.32	Second	Fourth	Third	First
KHUSHAB	30.72	9.1	17.35	28.7	First	Fourth	Third	Second
MUZAFARGARH	26.5	9.4	17.16	25.3	First	Fourth	Third	Second
MIRPUR KHAS	19.6	4.8	25.05	23.05	Third	Fourth	First	Second
NOWSHERA	29.1	8.9	18.5	20.7	First	Fourth	Third	Second