

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 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
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.**

DESCRIPTION				JAZZ	TELENOR	UFONE	ZONG
Ookla Tests	THROUGHPUT TEST	DOWNLOAD	ATTEMPTS	8309	8284	8308	8295
			SPEED (Mbps)	28.361	4.916	11.909	23.291
		UPLOAD	ATTEMPTS	8309	8284	8308	8295
			SPEED (Mbps)	21.793	5.827	20.066	20.24
	PING TEST	ATTEMPTS		8309	8284	8308	8295
		LATENCY (msec)		34.3	43.3	42	52.5

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
UPPER DIR	10.86	3.16	11.36	17.84	Third	Fourth	Second	First
LARKANA	30.20	7.20	8.90	20.00	First	Fourth	Third	Second
LAHORE	23.15	10.88	16.15	32.24	Second	Fourth	Third	First
KHAIRPUR	24.49	15.50	8.86	32.00	Second	Third	Fourth	First
SHAHKOT	30.09	10.52	21.96	23.18	First	Fourth	Third	Second
GUJAR KHAN	32.95	2.13	9.83	17.98	First	Fourth	Third	Second
WAH/ TAXILA	29.45	2.21	17.33	21.65	First	Fourth	Third	Second
RAWALPINDI	33.39	3.96	9.43	17.54	First	Fourth	Third	Second
BUNER	40.78	2.42	5.47	22.75	First	Fourth	Third	Second
JACOBABAD	33.4	12.3	11.06	33.1	First	Third	Fourth	Second
SUJAWAL	48.46	4.29	19.02	40.88	First	Fourth	Third	Second
MITHI	46.04	3.72	13.64	18.93	First	Fourth	Third	Second
ABBOTTABAD	14.56	3.39	6.59	16.77	Second	Fourth	Third	First
SWABI	31.27	1.89	7.18	19.92	First	Fourth	Third	Second
MURIDKE	11.11	22.31	14.93	31.33	Fourth	Second	Third	First

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
UPPER DIR	11065	3282	19139	14674	Third	Fourth	First	Second
LARKANA	3925	600	2875	2688	First	Fourth	Second	Third
LAHORE	25093	9296	24083	22899	First	Fourth	Second	Third
KHAIRPUR	3300	713	2325	3675	Second	Fourth	Third	First
SHAHKOT	33617	5476	24671	30238	First	Fourth	Third	Second
GUJAR KHAN	30928	5316	22251	13600	First	Fourth	Second	Third
WAH/ TAXILA	22982	6303	23838	18667	Second	Fourth	First	Third
RAWALPINDI	21782	5885	17791	13816	First	Fourth	Second	Third
BUNER	13262	7324	16522	13043	Second	Fourth	First	Third
JACOBABAD	2725	600	2738	4475	Third	Fourth	Second	First
SUJAWAL	25136	8283	14910	32259	Second	Fourth	Third	First
MITHI	15552	5947	25324	9073	Second	Fourth	First	Third
ABBOTTABAD	15691	4040	11510	15064	First	Fourth	Third	Second
SWABI	21012	4590	18413	23622	Second	Fourth	Third	First
MURIDKE	9286	31008	24276	30220	Fourth	First	Third	Second

Table 4.10: Ookla Upload Throughput in Technology Auto Detect Mode