4G Signal Confidence Level- Technology Auto Detect Mode								
RAWALPINDI	97.53	97.72	99.68	99.30	Yes	Yes	Yes	Yes
CHUNIAN	98.15	**78.93**	96.86	99.05	Yes	**No**	Yes	Yes
SHARAQPUR	97.42	**83.00**	99.59	98.43	Yes	**No**	Yes	Yes
KOTRI	98.35	90.02	94.45	98.62	Yes	Yes	Yes	Yes

Table 4.1: 4G Signal Confidence Level- Technology Auto Detect Mode

5.   NETWORK COVERAGE – 3G

During the survey, 3G signal strength samples were also recorded on survey routes, wherever network switched to 3G while keeping the mobile handset in technology auto detect mode. City wise compliance of 90% Confidence Level of signal strength is shown in <u>Table 5.1: 3G Signal Confidence Level - Technology Auto Detect Mode</u>

3G Signal Confidence Level - Technology Auto Detect Mode								
City	Confidence Level (%)				Compliant (Yes/No)			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
BAHWALNAGAR	N/A	100.00	100.0	N/A	N/A	Yes	Yes	N/A
D.I KHAN	N/A	100.00	100.00	N/A	N/A	Yes	Yes	N/A
LAHORE	N/A	100.00	100.00	N/A	N/A	Yes	Yes	N/A
MARDAN	N/A	100.00	100.00	100.00	N/A	Yes	Yes	Yes
SAMUNDARI	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SHIKARPUR	N/A	N/A	100.00	100.00	N/A	N/A	Yes	Yes
HYDERABAD	N/A	100.00	100.00	100.00	N/A	Yes	Yes	Yes
JHELUM	N/A	99.63	100.00	100.00	N/A	Yes	Yes	Yes
KARACHI MALIR	100.00	99.94	99.79	99.44	Yes	Yes	Yes	Yes
NAWABSHAH	N/A	N/A	100.00	N/A	N/A	N/A	Yes	N/A
NUSHKI	N/A	N/A	100.00	N/A	N/A	N/A	Yes	N/A
QUETTA	N/A	100.00	100.00	100.00	N/A	Yes	Yes	Yes
RAWALPINDI	N/A	100.00	100.00	100.00	N/A	Yes	Yes	Yes
CHUNIAN	N/A	99.92	100.00	N/A	N/A	Yes	Yes	N/A
SHARAQPUR	100.00	N/A	N/A	N/A	Yes	N/A	N/A	N/A
KOTRI	N/A	99.80	100.00	100.00	N/A	Yes	Yes	Yes

Table 5.1: 3G Signal Confidence Level - Technology Auto Detect Mode

6.   MOBILE BROADBAND SERVICE – DATA SPEED

Automode Testing. In order to measure the performance of Mobile Broadband Services, Data Download and Upload tests were performed. During the test, a File of 10GB was downloaded and Uploaded for 3 minutes duration. Test Statistics are shown in <u>Table 6.1: Data Tests Statistics</u> while the Download and Upload Speed Results are shown in <u>Table 6.2: Download Data Throughput</u> and <u>Table 6.3: Upload Data Throughput</u> respectively.

DESCRIPTION		**Jazz**	**Telenor**	**Ufone**	**Zong**
DOWNLOAD	ATTEMPTS	6116	6093	6118	6134
	SPEED (Mbps)	22.60	9.19	9.52	23.37
UPLOAD	ATTEMPTS	6120	6096	6122	6140
	SPEED (Mbps)	20.77	5.65	17.07	19.53

Table 6.1: Data Tests Statistics

DOWNLOAD DATA THROUGHPUT ≥ 4Mbps								
City	Download Data Throughput [Mbps]				Operator Position			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
BAHWALNAGAR	12.78	13.35	9.35	23.74	Third	Second	Fourth	First
D.I KHAN	18.04	**2.23**	4.110	7.12	First	**Fourth**	Third	Second
LAHORE	27.65	9.62	13.61	33.21	Second	Fourth	Third	First
MARDAN	25.67	4.32	6	16.25	First	Fourth	Third	Second
SAMUNDARI	19.98	9.99	7.71	20.59	Second	Third	Fourth	First
SHIKARPUR	21.30	10.00	8.80	17.2	First	Third	Fourth	Second
HYDERABAD	28.9	9.15	13.36	25.56	First	Fourth	Third	Second
JHELUM	39.28	8.08	8.46	32.52	First	Fourth	Third	Second
KARACHI MALIR	23.72	10.19	11.93	22.94	First	Fourth	Third	Second
NAWABSHAH	9.90	7.9	9.6	11.4	Second	Fourth	Third	First
NUSHKI	N/A	5.22	**2.38**	19.49	N/A	Second	**Third**	First
QUETTA	26.26	9.2	12.32	23.61	First	Fourth	Third	Second
RAWALPINDI	28.72	5.06	6.77	18.08	First	Fourth	Third	Second
CHUNIAN	22.03	11.82	6.66	32.4	Second	Third	Fourth	First
SHARAQPUR	23.20	12.89	12.68	28.93	Second	Third	Fourth	First
KOTRI	23.81	9.83	15.42	16.3	First	Fourth	Third	Second

Table 6.2: Download Data Throughput

UPLOAD DATA THROUGHPUT ≥ 1Mbps								
City	Upload Data Throughput [Mbps]				Operator Position			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
BAHWALNAGAR	5.54	5.27	16.77	20.7	Third	Fourth	Second	First
D.I KHAN	5.49	2.14	12.59	12.51	Third	Fourth	First	Second
LAHORE	7.4	8.70	20.2	22	Fourth	Third	Second	First
MARDAN	6.87	5.05	14	18.07	Third	Fourth	Second	First
SAMUNDARI	6.15	7.40	17.56	20.31	Fourth	Third	Second	First
SHIKARPUR	6.55	4.94	20.8	18.9	Third	Fourth	First	Second
HYDERABAD	27.92	4.09	18.82	22.44	First	Fourth	Third	Second
JHELUM	24.02	8.05	14.56	21.1	First	Fourth	Third	Second
KARACHI MALIR	24.58	3.16	17.65	22.17	First	Fourth	Third	Second
NAWABSHAH	5.9	4.3	6.7	8.2	Third	Fourth	Second	First
NUSHKI	N/A	1.63	10.06	11.05	N/A	Third	Second	First
QUETTA	20.04	2.92	13.97	19.52	First	Fourth	Third	Second
RAWALPINDI	20.3	5.84	15.74	16.56	First	Fourth	Third	Second
CHUNIAN	19.55	7.41	16.15	21.21	Second	Fourth	Third	First
SHARAQPUR	21.31	7.23	18.75	16.22	First	Fourth	Second	Third
KOTRI	24.8	3.63	19.49	21.38	First	Fourth	Third	Second

Table 6.3: Upload Data Throughput

Ookla Speed Test. Ookla Speed Test was also carried out to measure Download and Upload Data Throughput. During the survey, Speed Test servers were automatically selected based on the lowest ping and geographical location of the server. Ookla Test Statistics are shown in Table 6.4: Ookla Tests Statistics while the Download and Upload Speed Results are