

INDEPENDENT QUALITY OF SERVICE SURVEY REPORT

INTRODUCTION

1.1. In order to measure the performance and service quality of Cellular Mobile Operators (CMOs), an independent Quality of Service (QoS) Survey has been carried out in eight (08) cities of Gilgit Baltistan. The name of cities along with survey dates are shown in **Table 1.1: QoS Survey Cities & Dates:**

S. #	Province	City	Survey Dates
1.	Gilgit Baltistan	Gilgit	26 th Aug ~ 9 Sep 2021
2.		Skardu	
3.		Gahkuch	
4.		Hunza	
5.		Jaglot	
6.		Astore	
7.		Khaplu	
8.		Shigar	

Table 1.1: QOS Survey Cities & Dates

DRIVE TEST DETAILS

2.1. The QoS survey was carried out using Automated QoS Monitoring & Benchmarking Tool i.e. "SMARTBENCHMARKER". Drive test teams selected survey routes in such a manner to cover main roads, service roads and majority of sectors/colonies. During Voice Calls and SMS Sessions, both A-Party and B-Party mobile handsets were kept in auto detect mode, whereas, in case of Data Sessions the mobile handset were locked in 4G/LTE and 3G mode.

MOBILE NETWORK COVERAGE

3.1. **4G / LTE & 3G SIGNAL STRENGTH.** During the survey, 4G/LTE and 3G Signal Strength samples were recorded on survey routes. As per Next Generation Mobile Service (NGMS) licenses awarded, licensees are required to meet the threshold of **-100dBm or above of Reference Signal Receive Power (RSRP) with 90% confidence level & -100dBm or above of Received Signal Code Power (RSCP) with 90% confidence level.** Only SCOM is providing 4G/LTE and 3G data services in Gilgit Baltistan. The Confidence Level and Compliance of 4G and 3G signal strength is shown in **Table 3.1: 4G & 3G Signal Strength - 100dBm with 90% Confidence Level.**

Cities	SCOM SIGNAL STRENGTH			
	3G		4G	
	Average (-dBm)	Confidence (%)	Average (-dBm)	Confidence (%)
Gahkuch	-71.3	99.98	-82.1	89.93
Gilgit	-66.5	100	-79.90	98.99
Hunza	-75.30	95.07	-84.6	86.87
Jaglot	-76.2	100	-88.8	75.18
Astore	-75.5	100	-85.7	92.16
Khaplu	-78.8	98.23	-87.2	92.47
Shigar	-80.8	98.20	-92.4	85.20
Skardu	-73.6	100	-80.7	98.89

Table 3.1: 4G & 3G Signal Strength -100dBm with 90% Confidence Level

MOBILE BROADBAND SERVICE

4.1. **4G & 3G USER DATA THROUGHPUT.** As per Next Generation Mobile Service (NGMS) licenses awarded, licensees are required to meet the threshold of **minimum of 2Mbps of 4G User Data Throughput**, & **minimum of 256Kbps of 3G User Data Throughput**. The results of Data Service QoS KPI i.e. User Data Throughput of SCOM is shown in **Table4.1: 4G & 3G User Data Throughput**

CITIES	SCOM USER DATA THROUGHPUT	
	3G ($\geq 256\text{Kbps}$)	4G ($\geq 2\text{Mbps}$)
Gahkuch	297.32	0.41
Gilgit	1400.79	1.73
Hunza	1710.02	1.04
Jaglot	679.89	0.54
Astore	1633.74	1.02
Khaplu	3332.96	4.25
Shigar	39991.61	2.84
Skardu	619.98	0.39

Table4.1: 4G & 3G User Data Throughput

VOICE SERVICE

5.1. 7 x QoS KPIs have been measured while testing voice services in 8 x cities of Gilgit Baltistan. The compliance level of threshold values of voice QoS KPIs in each city is shown in **Table 5.1: Voice QoS KPIs Compliance Level**.