

# Fixed Broadband Quality of Service (QoS) Surveys

## Network End Surveys

**Quarter-03 2026**

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# 1. Executive Summary

Pakistan Telecommunication Authority (PTA) has carried out **Network End** Quality of Service (QoS) Survey of **23** x unique operators in **21** x major cities of Pakistan during 3rd Quarter 2026. During the survey, the performance of fixed line broadband operators has been assessed in accordance with the Fixed line Broadband Regulation, 2022. Operator wise & City wise summary of operators are mentioned below:




## Operator Wise – Compliance Status

| Sr No. | Company Name | City | Overall Score | Percentage Compliance (%) | Compliance Status |
|---|---|---|---|---|---|
| 1 | Net-Cloud Telecom (Pvt.) Ltd | Abbottabad | 7 | 100.00 | ↑ |
| 2 | Pace Telecom and Broadcasting (Pvt.) Ltd. | Abbottabad | 4 | 57.14 | ↓ |
| 3 | Airtel Wimax Pvt. Ltd | Chichawatni | 7 | 100.00 | ↑ |
| 4 | Net-Cloud Telecom (Pvt.) Ltd | Dadu | 6 | 85.71 | → |
| 5 | SCO | Ghalapan | 7 | 100.00 | ↑ |
| 6 | SCO | Gupis–Yasin | 7 | 100.00 | ↑ |
| 7 | New Millennium Network (Pvt.) Ltd | Haripur | 6 | 85.71 | → |
| 8 | TES Media (Pvt.) Ltd | Islamabad | 6 | 85.71 | → |
| 9 | GH Wireless Internet Service | Rawalpindi | 6 | 85.71 | → |
| 10 | Login.Me (Pvt.) Limited | Jaranwala | 7 | 100.00 | ↑ |

| Sr No. | Company Name | City | Overall Score | Percentage Compliance (%) | Compliance Status |
|---|---|---|---|---|---|
| 11 | Fiberish (Pvt.) Ltd | Karachi | 7 | 100.00 | |
| 12 | Gerry's Information Technology (Pvt.) Ltd. | Karachi | 6 | 85.71 | |
| 13 | Riderz Network Broadband (Pvt.) Limited | Karachi | 7 | 100.00 | |
| 14 | Smart Line (Pvt.) Ltd | Lahore | 7 | 100.00 | |
| 15 | Web Concepts (Pvt.) Ltd. | Lahore | 7 | 100.00 | |
| 16 | Khyber Internet Services Provider (Pvt.) Limited | Mardan | 6 | 85.71 | |
| 17 | Optix Pakistan (Pvt.) Ltd. | Multan | 7 | 100.00 | |
| 18 | Teznet (Pvt.) Ltd. | Quetta | 7 | 100.00 | |
| 19 | Wateen WiMax (Pvt.) Ltd | Quetta | 6 | 85.71 | |
| 20 | S.B Link Network (Pvt.) Ltd. | Rahim Yar Khan | 7 | 100.00 | |
| 21 | Multinet Pakistan (Pvt.) Ltd. | Rawalpindi | 6 | 85.71 | |
| 22 | Nexgen Telecommunication (Pvt.) Ltd. | Sargodha | 7 | 100.00 | |
| 23 | D3 Advertising & Communications (Pvt.) Limited | Shaheed Benazirabad | 6 | 85.71 | |
| 24 | Fiberish (Pvt.) Ltd | Shaheed Benazirabad | 7 | 100.00 | |
| 25 | SCO | Shatial | 7 | 100.00 | |
| 26 | Pace Telecom and Broadcasting (Pvt.) Ltd. | Swat | 6 | 85.71 | |
| 27 | Wavecomm (Pvt.) Ltd. | Usta Muhammad | 6 | 85.71 | |
| 28 | Falcon Broadband (Pvt.) Ltd | Vehari | 6 | 85.71 | |

**Legends:**

-  --- All KPIs are complied
-  --- Only one KPI is Non-complied
-  --- More than one KPIs are Non-complied

# City Wise – QoS KPIs Compliance Status

| City | Operator Name | Network Availability Core Nodes >=99.9% | | Network Availability - Access Nodes >=99% | | RTT - Local Network Latency <= 40msec | | RTT - International Segment – Terrestrial <= 110msec | | Bandwidth Utilization<=80% | | Jitter<=15msec | | Data Throughput | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | DL | UL | - |
| | | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Obtained | Compliance (Y/N) |
| Abbottabad | Net-Cloud Telecom (Pvt.) Ltd | 100.00 | Y | 100.00 | Y | 36.4 | Y | 51.6 | Y | 76.33 | Y | 4.2 | Y | 16 | 16 | Y |
| Abbottabad | Pace Telecom and Broadcasting (Pvt.) Ltd. | 99.73 | N | 97.13 | N | 4.6 | Y | 50.6 | Y | 81.11 | N | 3 | Y | 20 | 21 | Y |
| Chichawatni | Airtel Wimax Pvt. Ltd | 100.00 | Y | 100.00 | Y | 2.31 | Y | 35.59 | Y | 62.75 | Y | 1.1 | Y | 33 | 19 | Y |
| Dadu | Net-Cloud Telecom (Pvt.) Ltd | 99.98 | Y | 99.95 | Y | 30.65 | Y | 25.17 | Y | 87.50 | N | 2.01 | Y | 9 | 16 | Y |
| Ghalapan | SCO | 100.00 | Y | 99.97 | Y | 11.04 | Y | 48.55 | Y | 6.00 | Y | 2.1 | Y | 8 | 2 | Y |
| Gupis–Yasin | SCO | 100.00 | Y | 99.79 | Y | 10.5 | Y | 47.39 | Y | 14.00 | Y | 2.16 | Y | 17 | 2 | Y |
| Haripur | New Millennium Network (Pvt.) Ltd | 100.00 | Y | 100.00 | Y | 2 | Y | 43 | Y | 87.72 | N | 0.5 | Y | 17 | 16 | Y |
| Islamabad | TES Media (Pvt.) Ltd | 100.00 | Y | 100.00 | Y | 4.4 | Y | 41.29 | Y | 88.03 | N | 1.67 | Y | 17 | 18 | Y |
| Islamabad | GH Wireless Internet Service | 99.99 | Y | 99.00 | Y | 5.08 | Y | 63.4 | Y | 85.13 | N | 5.31 | Y | 77 | 23 | Y |
| Jaranwala | Login.Me (Pvt.) Limited | 100.00 | Y | 100.00 | Y | 2.55 | Y | 31.4 | Y | 79.20 | Y | 1.25 | Y | 22 | 22 | Y |
| Karachi | Fiberish (Pvt.) Ltd | 100.00 | Y | 99.50 | Y | 1 | Y | 41.99 | Y | 80.00 | Y | 4.51 | Y | 11 | 6 | Y |
| Karachi | Gerry's Information Technology (Pvt.) Ltd. | 100.00 | Y | 100.00 | Y | 5.28 | Y | 15.02 | Y | 96.70 | N | 0.54 | Y | 11 | 3 | Y |

| City | Operator Name | Network Availability Core Nodes >=99.9% | | Network Availability - Access Nodes >=99% | | RTT - Local Network Latency <= 40msec | | RTT - International Segment – Terrestrial <= 110msec | | Bandwidth Utilization<=80% | | Jitter<=15msec | | Data Throughput | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | DL | UL | - |
| | | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Obtained | Compliance (Y/N) |
| Karachi | Riderz Network Broadband (Pvt.) Limited | 100.00 | Y | 99.30 | Y | 1.77 | Y | 15.59 | Y | 67.10 | Y | 0.83 | Y | 13 | 3 | Y |
| Lahore | Smart Line (Pvt.) Ltd | 100.00 | Y | 100.00 | Y | 1 | Y | 32.15 | Y | 38.32 | Y | 0.3 | Y | 10 | 10 | Y |
| Lahore | Web Concepts (Pvt.) Ltd. | 100.00 | Y | 100.00 | Y | 4.7 | Y | 35.55 | Y | 54.24 | Y | 2.11 | Y | 10 | 8 | Y |
| Mardan | Khyber Internet Services Provider (Pvt.) Limited | 100.00 | Y | 100.00 | Y | 1 | Y | 39 | Y | 99.16 | N | 2 | Y | 75 | 30 | Y |
| Multan | Optix Pakistan (Pvt.) Ltd. | 100.00 | Y | 100.00 | Y | 18.6 | Y | 34.82 | Y | 71.00 | Y | 1.74 | Y | 38 | 13 | Y |
| Quetta | Teznet (Pvt.) Ltd. | 99.98 | Y | 99.98 | Y | 2.25 | Y | 32.67 | Y | 58.78 | Y | 1.99 | Y | 8 | 3 | Y |
| Quetta | Wateen WiMax (Pvt.) Ltd | 99.90 | Y | 99.60 | Y | 1.4 | Y | 60 | Y | 87.00 | N | 3.98 | Y | 39 | 10 | Y |
| Rahim Yar Khan | S.B Link Network (Pvt.) Ltd. | 100.00 | Y | 100.00 | Y | 8.9 | Y | 45.73 | Y | 65.02 | Y | 2.65 | Y | 12 | 5 | Y |
| Rawalpindi | Multinet Pakistan (Pvt.) Ltd. | 100.00 | Y | 99.82 | Y | 37.19 | Y | 48.17 | Y | 92.75 | N | 6.24 | Y | 75 | 9 | Y |
| Sargodha | Nexgen Telecommunication (Pvt.) Ltd. | 100.00 | Y | 100.00 | Y | 3.3 | Y | 38.75 | Y | 60.00 | Y | 1 | Y | 69 | 69 | Y |
| Shaheed Benazirabad | D3 Advertising & Communications (Pvt.) Limited | 100.00 | Y | 100.00 | Y | 8.18 | Y | 28.33 | Y | 87.00 | N | 1.38 | Y | 11 | 7 | Y |
| Shaheed Benazirabad | Fiberish (Pvt.) Ltd | 100.00 | Y | 99.97 | Y | 6.53 | Y | 58.5 | Y | 51.00 | Y | 5.7 | Y | 21 | 15 | Y |
| Shatial | SCO | 100.00 | Y | 99.92 | Y | 9.96 | Y | 43.87 | Y | 6.00 | Y | 3.43 | Y | 8 | 2 | Y |

| City | Operator Name | Network Availability Core Nodes >=99.9% | | Network Availability - Access Nodes >=99% | | RTT - Local Network Latency <= 40msec | | RTT - International Segment – Terrestrial <= 110msec | | Bandwidth Utilization<=80% | | Jitter<=15msec | | Data Throughput | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | DL | UL | - |
| | | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Compliance (Y/N) | Obtained | Obtained | Compliance (Y/N) |
| Swat | Pace Telecom and Broadcasting (Pvt.) Ltd. | 100.00 | Y | 100.00 | Y | 35.5 | Y | 71 | Y | 90.62 | N | 1 | Y | 4 | 11 | Y |
| Usta Muhammad | Wavecomm (Pvt.) Ltd. | 99.90 | Y | 99.90 | Y | 2.44 | Y | 71.45 | Y | 90.00 | N | 3.98 | Y | 25 | 10 | Y |
| Vehari | Falcon Broadband (Pvt.) Ltd | 100.00 | Y | 100.00 | Y | 35.97 | Y | 68.99 | Y | 73.75 | Y | 40.61 | N | 8 | 8 | Y |

**Note:** **Red Highlighted KPIs are non-complied.**

## 2. Background

The **Fixedline Quality of Service (QoS**) surveys for fixedline operators are conducted to assess the performance, reliability, and user satisfaction of fixed-line broadband services across Pakistan. This survey aims to understand how well service providers meet the regulatory benchmarks and consumer expectations for internet speed, connectivity stability, and customer support. As fixed-line broadband plays a crucial role in both personal and business communication, ensuring high-quality service is critical for the continued growth of digital infrastructure.

These Surveys across Pakistan are governed by the "Fixed Broadband Quality of Service Regulations, 2022." The regulations were enacted to set **Key Performance Indicators (KPIs)** that BSPs must meet to ensure reliable and high-quality fixed broadband services across Pakistan. These KPIs serve as measurable benchmarks to assess the service quality delivered to customers, including aspects such as network uptime, data throughput, latency, jitter, packet loss, and customer service responsiveness.

## 3. Scope

QoS surveys are crucial tools for measuring the performance of broadband networks in Pakistan, ensuring service providers adhere to high standards, and continually improving the availability and quality of internet services for consumers. These surveys cover all fixed broadband technologies in use, such as xDSL, DSL, copper and fiber optics technologies. The regulations apply to all BSPs operating in Pakistan, requiring them to maintain **minimum service standards** at various levels of their networks—from access nodes to core nodes.

These surveys also provide critical data on network performance, helping identify gaps and inefficiencies in service delivery. This helps regulatory authorities enforce service standards and ensure BSPs meet the requirements for customer satisfaction.

By regularly testing and publishing the results of broadband services, the PTA promotes **transparency**. BSPs are held accountable for their network performance, fostering competition and driving improvements in broadband services.

By gauging factors such as **download/upload speeds**, network latency, and customer service efficiency, the surveys enable BSPs to improve their networks, which directly impacts the **user experience**.

## 4. Methodology

The **User End Quarter 03 2026 surveys** started from July 1, 2026 till September 30, 2026. In the surveys, **23 x major BSPs** are inspected, operating in **21 x cities** across Pakistan. These cities are selected based on their high subscriber density, ensuring that the surveys focused on areas where the quality of service would have the most significant impact. The surveyed cities include:

| | | | | | |
|---|---|---|---|---|---|
| i. | Abbottabad | viii. | Jaranwala | xv. | Rawalpindi |
| ii. | Chichawatni | ix. | Karachi | xvi. | Sargodha |
| iii. | Dadu | x. | Lahore | xvii. | Shaheed Benazirabad |
| iv. | Ghalapan | xi. | Mardan | xviii. | Shatial |
| v. | Gupis–Yasin | xii. | Multan | xix. | Swat |
| vi. | Haripur | xiii. | Quetta | xx. | Usta Muhammad |
| vii. | Islamabad | xiv. | Rahim Yar Khan | xxi. | Vehari |

The surveys are conducted by the **Enforcement Division team** of the PTA at the **Network Operation Centers (NOCs)** of each BSP. This method allowed for real-time assessments of network performance across various parameters, offering a detailed insight into the performance of fixed broadband networks at a deeper, technical level.

## 5. Parameters Monitored and Survey Results

Following key network performance parameters are checked during the surveys:

a. Bandwidth Utilization
b. Network Availability
    i. Core Nodes
    ii. Access Nodes
c. Network Latency / Round Trip Time (RTT)

i. Local Network Latency

ii. International Segment – Terrestrial

d. Jitter

e. Data Throughput (Download & Upload)

Below mentioned are details of Network level parameters measurement details along with survey results:

## a. Bandwidth Utilization

This measures how effectively the network's capacity is being used. It is the ratio of peak utilization of bandwidth to the total bandwidth available.

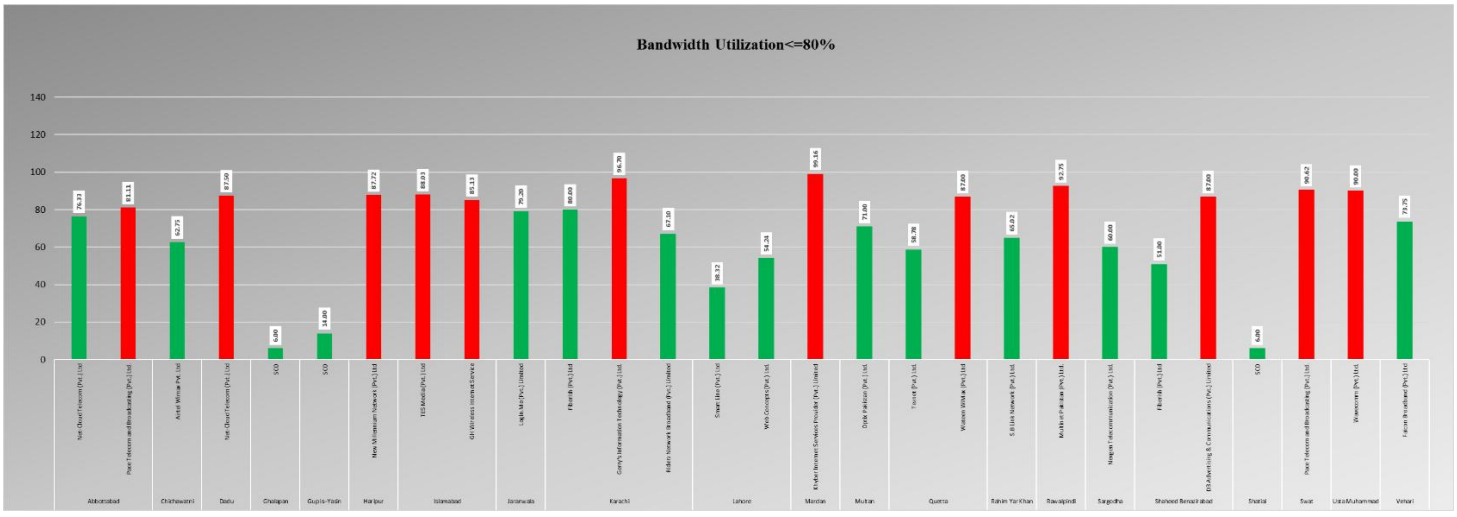
**Benchmark:**

The bandwidth utilization should be ≤ **80%**

**Measurement**

BSPs are required to run "Daily" MRTG (Multi Router Traffic Grapher) Graphs at 5-minute average during peak hours. The highest bandwidth utilization is the peak utilization level for each month. BASPs are required to run "Monthly" MRTG Graphs to obtain average bandwidth utilization for each month for their network. BSPs should closely monitor their links and the loading level shall not exceed.

**Bandwidth Utilization** = (Peak Utilization level of the network / Total bandwidth available) x 100%



**Results**

Bandwidth utilization for most of the operators is compiled and is below 80%.

## b. Network Availability

Network Availability is the measure of the degree to which the network (Access and Core) is operable and not in a state of failure or outage at any point of time.

It measures the total downtime of the network, including the ATM/IP switches, multiplexers, routers, e-mail facilities (if provided) and connection to Internet backbone over a month. All scheduled downtime for the purposes of maintenance and upgrading of the network system will be excluded from the calculation.

**Benchmark**

Network Availability for:

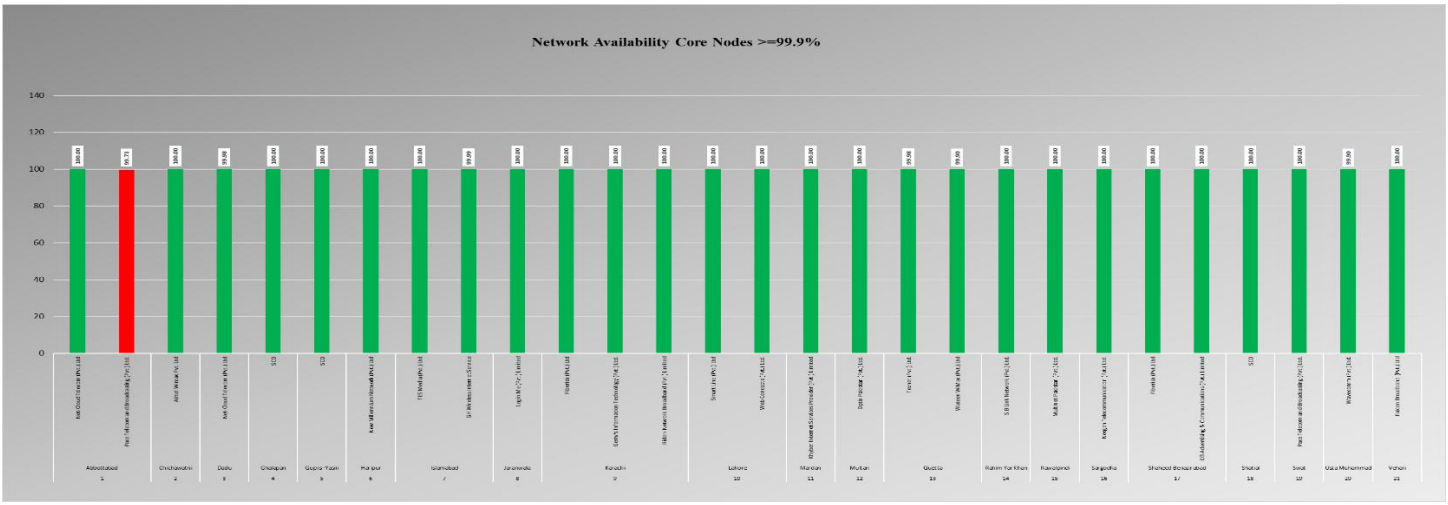
i. Access Nodes should be ≥ 99% and for;
ii. Core Nodes should be ≥ 99.9%

**Measurement**

**Network Availability** = (Total operational minutes - Total minutes of service downtime) / (Total operational minutes) x 100%

### i. Network Availability – Core Nodes

Core Nodes include BRAS, Metro Ethernet Switches, routers etc. along with their Operational Minutes and Down Time Minutes.



**Results**

The majority of operators comply with the KPI threshold i.e. Network Availability of Core Nodes. However, Pace Telecom does not meet the prescribed threshold.

### ii. Network Availability – Access Nodes

Access Nodes include MSAGs/MSANs, DSLAMs, ONUs, etc. along with their Operational Minutes and Down Time Minutes.




**Results**

The majority of operators comply with the KPI threshold i.e. Network Availability of Access Nodes. However, Pace Telecom does not meet the prescribed threshold.

## c. Network Latency / Round Trip Time (RTT)

Latency or Round Trip Time (RTT) is the measure of duration of round trip for a data packet between specific source and destination. It is used to measure the delay on a network at a given time. The greater the latency within a network, the longer it takes packets to reach their destination.

**Benchmark**

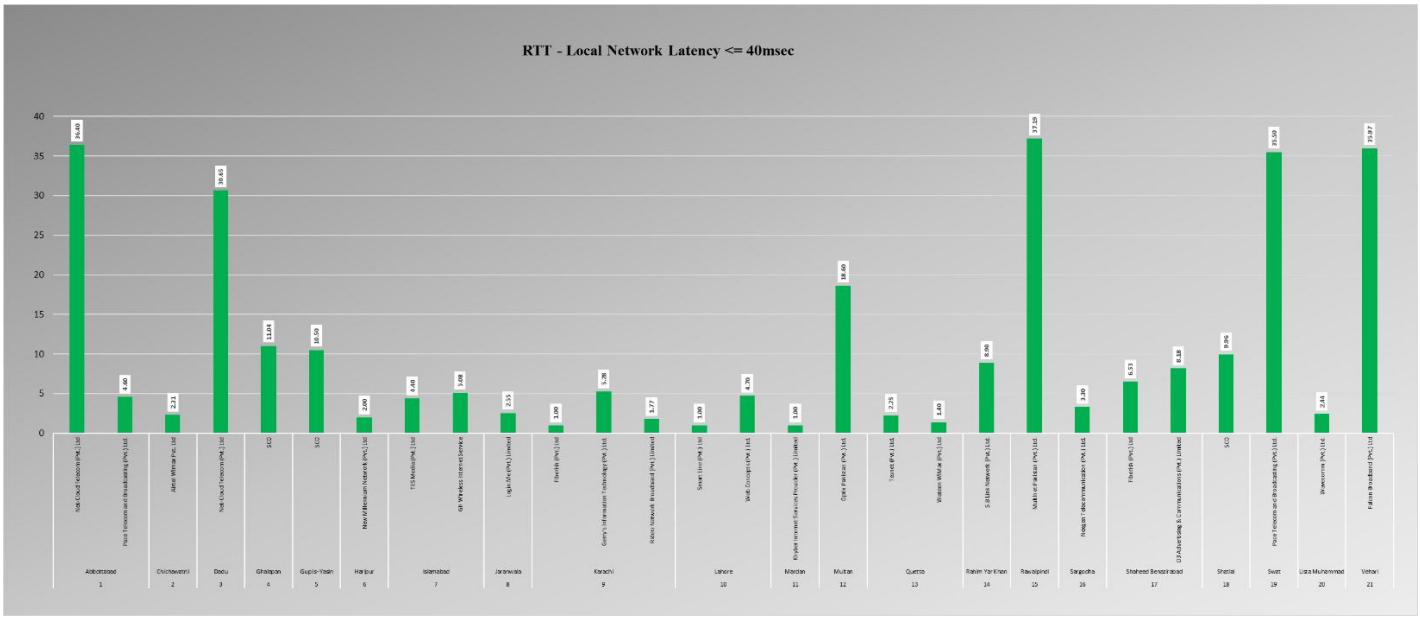
| Network Latency in Segment | Threshold |
|---|---|
| Local Network Latency | ≤ 40 msec |
| International Segment – Terrestrial | ≤ 110 msec |

**Measurement**

The RTT test shall be conducted using **"ping"**' based on a minimum standard packet size of 32 bytes, and should be measured up to the edge node of the network, connected to the Internet cloud or any other server decided by the Authority.

## i. Round Trip Time (RTT) – Local Network

For calculating the Local Network Latency, obtain IP address of BSP's BRAS and run command "ping xxxx.xxxx.xxxx.xxxx –n 100" in DOS Prompt / mode. (xxxx here refers the IP address of the BRAS).

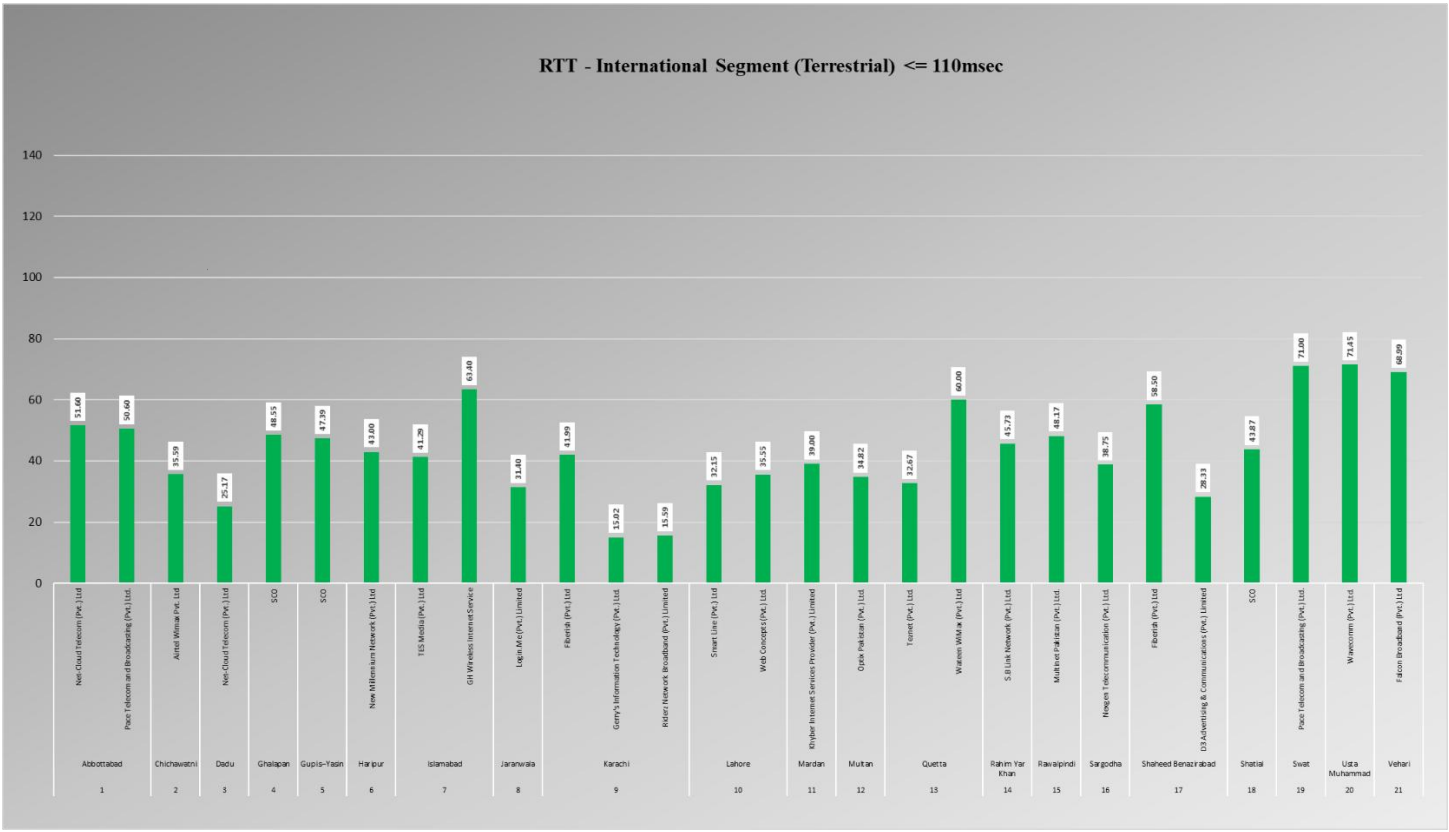



**Results**

All operators were found to be compliant with the prescribed KPI threshold for Round Trip Time (RTT) on the Local Network Latency KPI.

## ii. Round Trip Time (RTT) – International Segment (Terrestrial)

For Calculating the International Segment – Terrestrial Segment: Run the following command "ping www.google.com –n 100" or any international known server as decided by the PTA team.




**Results**

All operators were found to be compliant with the prescribed KPI threshold for Round Trip Time (RTT) on the International Network Latency KPI.

## d. Jitter (msec)

A jitter is a variation in latency. High amounts of jitter cause packets to be delivered out of sequence. In a specific time, window, jitter refers to the variation between the maximum delay and minimum delay.

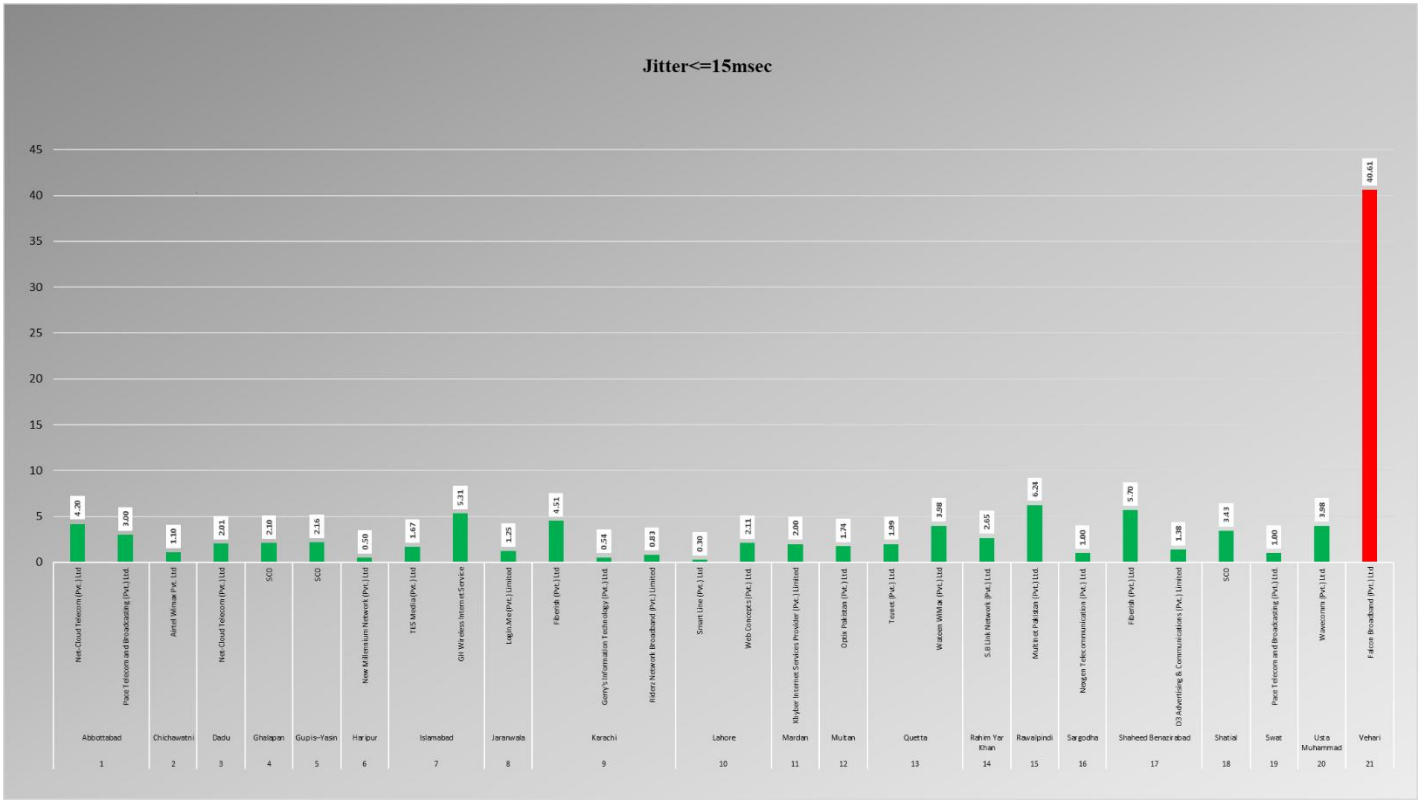
**Benchmark**

The Jitter should be **< 15 msec**

**Measurement**

The Jitter shall be calculated using **'ping'**. The minimum samples shall be 100. If RTT avg is the average RTT, derived out of 100 samples, and RTT 1, RTT 2....RTT 100 are the RTT for individual packets then jitter shall be calculated as follows:

Jitter (msec) = X (RTTavg-RTTk)/100 (magnitude shall be used without *+/-’ signs)




**Results**

Majority of operators comply with KPI i.e. Jitter. However, Falcon Broadband does not comply with KPI’s threshold.

## e. Data Throughput

The download data throughput is the data transmission rate that is achieved for downloading specified test files between a remote web site and a user's computer in order to check the actual download speed available to the subscriber.

**Benchmark**

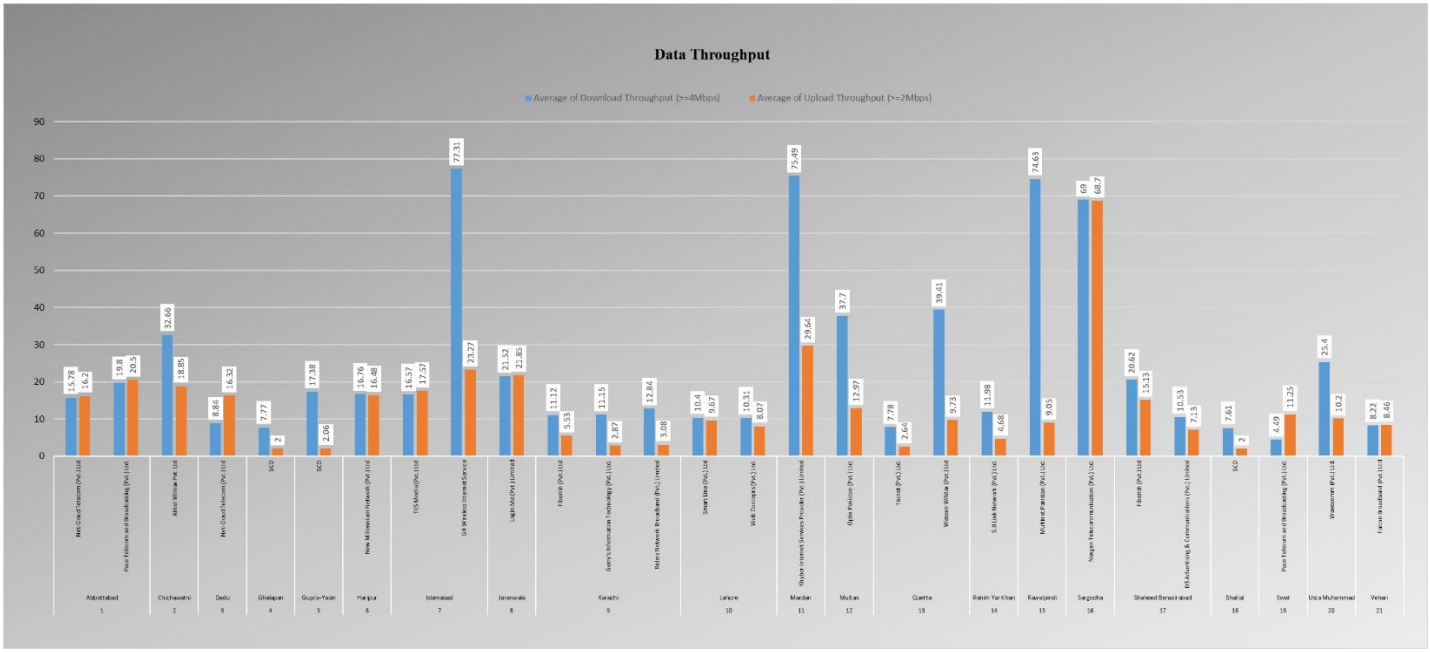
For Fixed Broadband Services checked at network end, the data throughput shall meet the minimum thresholds as defined below:

Download Data Throughput ≥ 4 Mbps

Upload Data Throughput ≥ 2 Mbps

**Measurement**

Data throughput shall be measured at the network end using standardized throughput testing tools. Measurements shall be conducted during peak & off-peak hours to reflect actual network performance.




**Results**

All operators were found to be in compliance with the prescribed KPI threshold for Data Throughput.

# 6. KPIs Analysis

## a. Bandwidth Utilization

The bandwidth utilization of some BSPs exceeds the prescribed threshold. This may result in reduced internet speeds for subscribers, adversely affecting the overall quality of service and user experience particularly during peak traffic hours.

## b. Latency

- Local segment: All operators were found to be within the prescribed latency threshold, with no instances of high latency observed.

- International segment: All operators were found to be within the prescribed latency threshold, with no instances of high latency observed

### c. Jitter

High latency was observed for Falcon Broadband, which may impact real-time services such as video conferencing and online gaming.

### d. Network Availability

- For Access Nodes, network availability is below the threshold for Pace Telecom.
- For Core Nodes, network availability is below the threshold for Pace Telecom.

### e. Data Throughput

The data throughput of all operators was found to be within the prescribed threshold.

# 7. Conclusion

Based on the Q3 2026 Network-End QoS Survey, most surveyed operators complied with the prescribed benchmarks for network availability, latency, jitter, and data throughput. However, certain operators exceeded the prescribed bandwidth utilization threshold, while Pace Telecom did not meet the required availability thresholds for both core and access nodes. Falcon Broadband also failed to meet the prescribed jitter threshold.

All surveyed operators complied with the prescribed local and international latency thresholds and data throughput requirements. The non-compliant operators should take corrective measures to improve the relevant KPIs, including capacity enhancement, improvements in network availability, and jitter reduction, as applicable, to ensure continued compliance with PTA's Fixed Broadband Quality of Service Regulations, 2022.