



***TELECOM REGULATORY AUTHORITY OF INDIA***

**Operator Assisted Drive Test  
Jaipur-Tonk Highway & Tonk City  
Rajasthan LSA**

**Contents**

- 1. **Introduction**.....**3**
- 2. **Executive Summary**..... 3-4
  - 2.1 Drive Test Details..... 3
  - 2.2 Drive Test route map..... 4
    - (a) Jaipur Tonk Highway
    - (b) Tonk City
  - 2.3 Areas Covered.....
  - 2.4 Detected Frequency Bands
  
- 3. **Detailed QoS performance analysis** .....5-25
  - 3.1 **Highway**.....**6-12**
    - (a) Voice performance ..... 7
    - (b) Data performance ..... 10
  
  - 3.2 **TSP Wise signal Strength on Highway Route** .....10
  
  - 3.3 **City**.....**14-17**
    - (a) Voice performance .....
    - (b) Data performance .....
  
  - 3.4 **Hotspots**.....**18-21**
    - (a) Locations.....
    - (b) Hotspot covered .....
    - (c) Voice performance .....
    - (d) Data performance (Auto-selection mode 5G/4G/3G/2G) .....
  
  - 3.5 TSP Wise signal Strength ( TonK City)** .....**22-25**

## 1. Introduction

TRAI Act, 1997 mandates the Authority to ensure the services delivered through various telecommunications networks meet required quality standards prescribed, to protect the interest of the consumers of telecommunication services. TRAI is also responsible for conducting the periodical audit of such services provided by the service providers so as to protect the interest of the consumers of telecommunications service.

Accordingly, TRAI with help of TSPs teams undertake assessment of Quality of Service of mobile service through Operator Assisted Drive Test (OADT).

In OADT, the performance of all service providers providing service in a Licensed Service Area (LSA) through various technologies (like 2G/ 3G/ 4G/ 5G) for voice and data are measured by conducting drive test. The drive test routes are finalized based on various objective criteria like reported network performance, consumer complaints etc.

## 2. Executive Summary

### 1. Drive test details

This report covers the findings of the OADT undertaken in Rajasthan License Service Area (LSA) during the month of June 2025 under the supervision of TRAI Regional Office (RO), Jaipur. Details of route/area covered during the OADT is as given below:

Sl. No	Drive test route	Type of route	Distance covered (KMs)/ Locations	From date	To date
1	Jaipur to Tonk	Highway	100	25/06/25	25/06/25
2	Tonk	City	47	26/06/25	26/06/25
3	Tonk	Hotspot	05 Locations	25/06/25	26/06/25

**Table-1:** Drive test summary

## 2.2 Drive test route

### (a) Jaipur-Tonk Highway



The map provides overview of drive test routes indicating Highway drive,

### (b) Tonk City

The map provides overview of drive test routes indicating city drive and hotspots as per the legends shown on the map.



## 2.3 Areas covered

**a) Jaipur-Tonk Highway:** - Jaipur to Tonk via Chaksu, Niwai, Mothuka town on highway

**b) Tonk City-** Adarsh Nagar, Ghanta Ghar, Kafila Bazar, Ahuja Colony, Purani Tonk, Shiv Nagar, Subhash Bazar etc.

### c) Hotspots

1. **Bus Stand, Tonk**
2. **Collectorate, Tonk**
3. **Govt. Hospital, Tonk**
4. **Govt PG College, Tonk**
5. **Kafila Bazar, Tonk**

## 2.4 Telecom service providers detected frequency bands

Technologies covered during the OADT and frequency bands in use are summarized in below table.

S.No.	Name of TSP	Technology	Frequency Bands (In MHz)
1	Bharti Airtel Ltd.	2G	900
2	Bharti Airtel Ltd.	4G	900,1800,2100,2300
3	Bharti Airtel Ltd.	5G	3500
4	BSNL	2G	900
5	BSNL	3G	2100
6	BSNL	4G	700,850,
7	Reliance JIO Infocomm Ltd.	4G	850,1800,2300
8	Reliance JIO Infocomm Ltd.	5G	700,3500
9	Vodafone Idea Ltd.	2G	900
10	Vodafone Idea Ltd.	4G	900,1800,2100,2500

**Table 2:** Telecom service provider (TSP) covered in OADT.

# Detailed QoS Performance Analysis

### 3.1 Jaipur-Tonk Highway

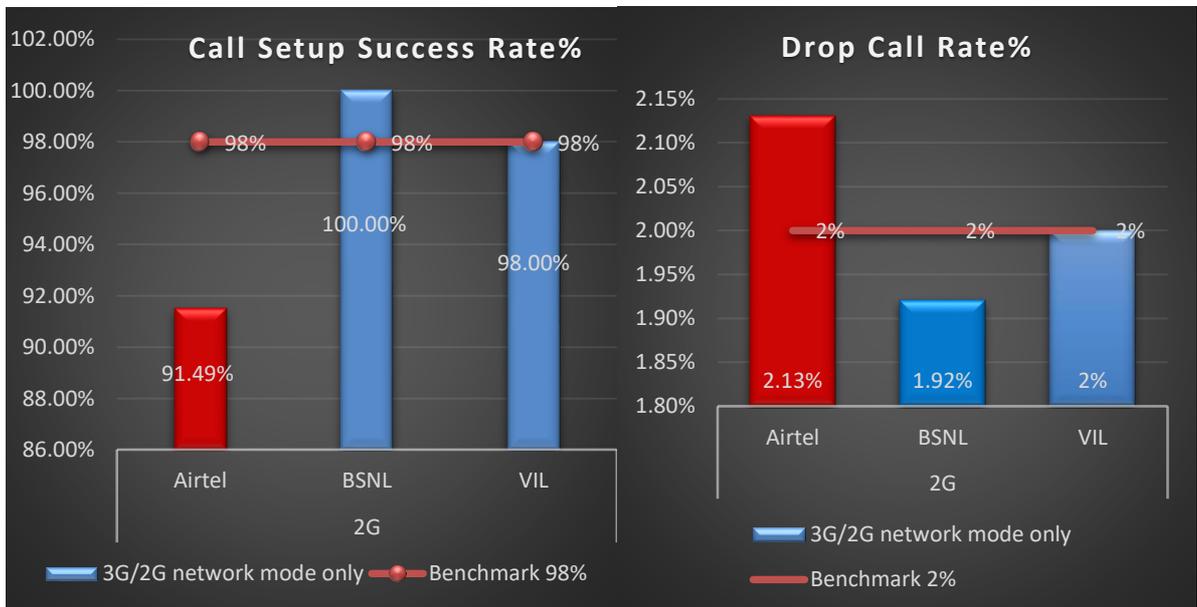
This section provides summary of overall QoS performance of the telecom service provider’s network in the Jaipur –Tonk Highway route.

#### (a)Voice performance

**Voice Call Performance in 3G/2G network mode only:** 3G/2G network mode testing has been done to reflect experience for respective users as they have only 3G/2G compatible handsets.

Parameters	Service Provider		
	3G/2G network mode only		
	AIRTEL	BSNL	VIL
Call Attempts	47	52	51
Call Setup Success Rate %	91.49	100.00	98
Drop Call Rate %	<b>2.13</b>	<b>1.92</b>	<b>2</b>
Call Setup Time-Average (Second)	3.95	3.52	2.78
Handover Success Rate %	97.24	100	95.30

**Table-3:** Summary of voice call performance in 3G/2G network mode only.



**Figure-2:** Call setup success rate and drop call rate performance.

Number of unique cell id’s covered in Voice test- Technology wise			
Technology	Service Provider		
	3G/2G network mode only		
	AIRTEL	BSNL	VIL
3G	NA	25	NA
2G	142	26	69

**Table-4:** Technology wise number of network cell id’s latched during drive test.

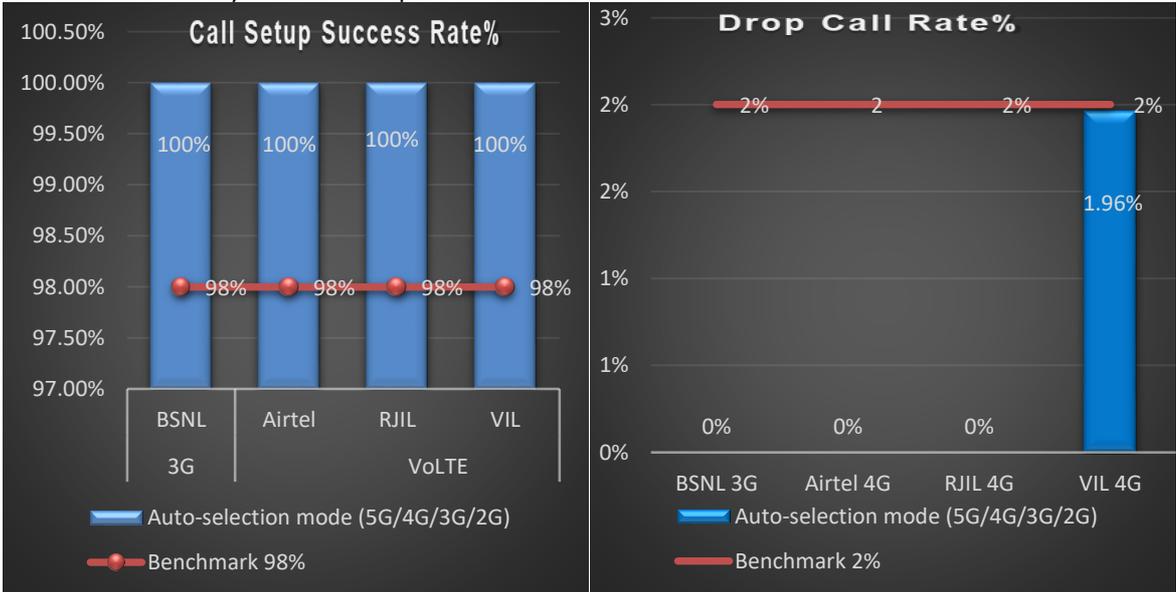
**Note-**

- RJIL does not have 3G/2G network.
- NA- Service provider doesn't provide services in respective technology.

## Voice Call Performance in auto network selection mode (5G/4G/3G/2G)

Parameters	Service Provider			
	Auto-selection mode (5G/4G/3G/2G)			
	AIRTEL	BSNL	RJIL	VIL
Call Attempts	54	48	50	52
Call Setup Success Rate %	100	100	100.00	100.00
Drop Call Rate %	0.00	0	0.00	1.96
Call Setup Time-Average (Second)	1.77	2.22	0.71	0.29
Handover Success Rate %	99.71	100	99.23	99.35

**Table-5:** Summary of voice call performance in network auto-selection mode.



**Figure-3:** Performance for call setup success rate and drop call rate.

Parameter	Service Provider			
	Mobile-to-Mobile (5G/4G - Open Mode)			
	AIRTEL	BSNL	RJIL	VIL
Call Established (within service provider Network)	43	NA	46	56
Number of silence call for >4 Sec	2	NA	0	0
Silence Call Rate %	4.65	NA	0.00	0.00
Number of silence instances for >4 Sec	2	NA	0	0
Number of silence instances for >3 Sec	3	NA	2	0
Number of silence instances for >2 sec	3	NA	8	0
RTP Jitter (4G & 5G) in ms	0.10	NA	11.27	28.55
Packet loss Rate Downlink %	0.71	NA	0.35	0.4
Packet loss Rate Uplink %	0.63	NA	0.27	0.4

**Table-6:** Summary of silence instances & packet loss rate for mobile-to-mobile call.

<b>Note-</b>				
<ul style="list-style-type: none"> <li>• <b>NA- Due to unavailability of packet switched (VoLTE &amp; VoNR) network in BSNL, silence instances are not captured.</b></li> </ul>				
<b>Number of unique cell id's covered in Voice test- Technology wise</b>				
<b>Technology</b>	<b>Service Provider</b>			
	<b>Auto-selection mode (5G/4G/3G/2G)</b>			
	<b>AIRTEL</b>	<b>BSNL</b>	<b>RJIL</b>	<b>VIL</b>
<b>5G</b>	0	NA	46	NA
<b>4G</b>	193	20	243	159
<b>3G</b>	NA	25	NA	NA
<b>2G</b>	0	26	NA	1

**Table-7:** Technology wise number of network cell id's latched during drive test.

<b>Note-</b>				
<ul style="list-style-type: none"> <li>• <b>NA- Service provider doesn't provide services on respective technology.</b></li> </ul>				

### Mean Opinion Score (MOS) performance for speech quality:

Mean opinion score indicates quality of speech observed during the drive test across different technologies. This parameter has been calculated for mobile-to-mobile calls made within same operator network in auto mode (5G/4G/3G/2G). As per ITU-T Recommendation P.863.1, MOS score values means: 5-Excellent, 4-Good, 3-Fair, 2-Poor, 1-Bad.

Speech Quality (MOS) distribution	Service Provider			
	AIRTEL	BSNL	RJIL	VIL
<b>Total Number of MOS Samples for calls in table-6</b>	1228	NA	920	692
<b>Speech Quality (Average MOS Score)</b>	4.01	NA	4.20	4.01
<b>Number of samples with MOS <math>\geq 4</math> to <math>&lt; 5</math> (Excellent)</b>	1023	NA	773	567
<b>Number of samples with MOS <math>\geq 3</math> to <math>&lt; 4</math> (Good)</b>	161	NA	69	90
<b>Number of samples with MOS <math>\geq 2</math> to <math>&lt; 3</math> (Fair)</b>	23	NA	43	18
<b>Number of samples with MOS <math>\geq 1</math> to <math>&lt; 2</math> (Poor)</b>	21	NA	35	17
<b>%age of samples with MOS <math>\geq 4</math> to <math>&lt; 5</math> (Excellent)</b>	83.31%	NA	84.02%	81.94%
<b>%age of samples with MOS <math>\geq 3</math> to <math>&lt; 4</math> (Good)</b>	13.11%	NA	7.50%	13.01%
<b>%age of samples with MOS <math>\geq 2</math> to <math>&lt; 3</math> (Fair)</b>	1.87%	NA	4.68%	2.60%
<b>%age of samples with MOS <math>\geq 1</math> to <math>&lt; 2</math> (Poor)</b>	1.71%	NA	3.80%	2.46%

**Table-8:** Summary of speech quality (MOS) samples.

**(b) Data performance (Auto-selection mode- 5G/4G/3G/2G)**

Parameters		Service Provider			
		Auto-selection mode (5G/4G/3G/2G)			
		AIRTEL	BSNL	RJIL	VIL
Download Throughput (Mbits/s)	Average	54.84	4.8	316.22	27
	80th Percentile	90.42	8.54	469.59	47.7
	20th Percentile	19.66	1.3	140.11	9.13
Upload Throughput (Mbits/s)	Average	19.96	1.2	71.44	13.7
	80th Percentile	28.08	2.6	106.74	22.2
	20th Percentile	10.63	0.3	37.06	5.16
Latency (ms)	50th Percentile	39.5	38	20	21

**Table-11:** Summary of data performance in network auto-selection mode.

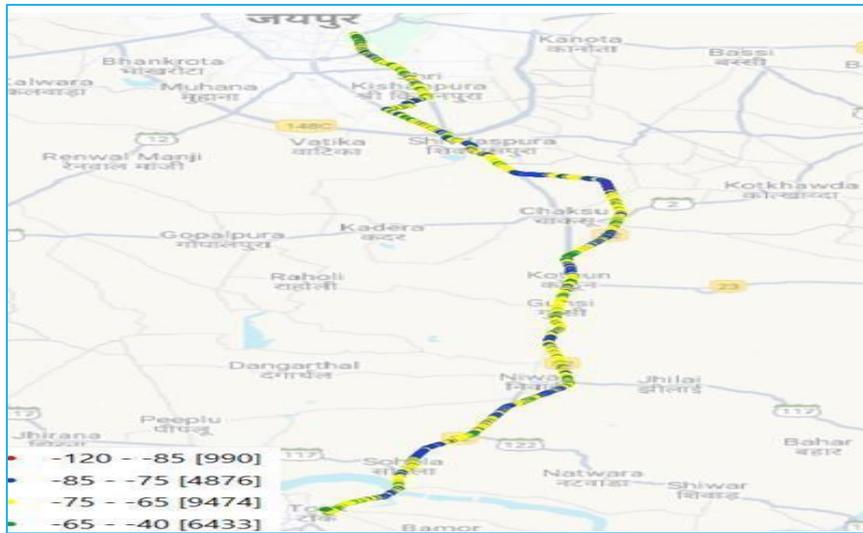
Number of unique cell id's covered in Data test- Technology wise				
Technology	Service Provider			
	Auto-selection mode (5G/4G/3G/2G)			
	AIRTEL	BSNL	RJIL	VIL
5G	0	NA	149	NA
4G	223	20	1	161
3G	NA	25	NA	NA
2G	0	26	NA	2

**Table-12:** Technology wise number of network cell id's latched during drive test.

<b>Note-</b>
<ul style="list-style-type: none"> <li>• NA- Service provider doesn't provide services in respective technology.</li> </ul>

### 3.2 TSP Wise Highway Route Coverage Map

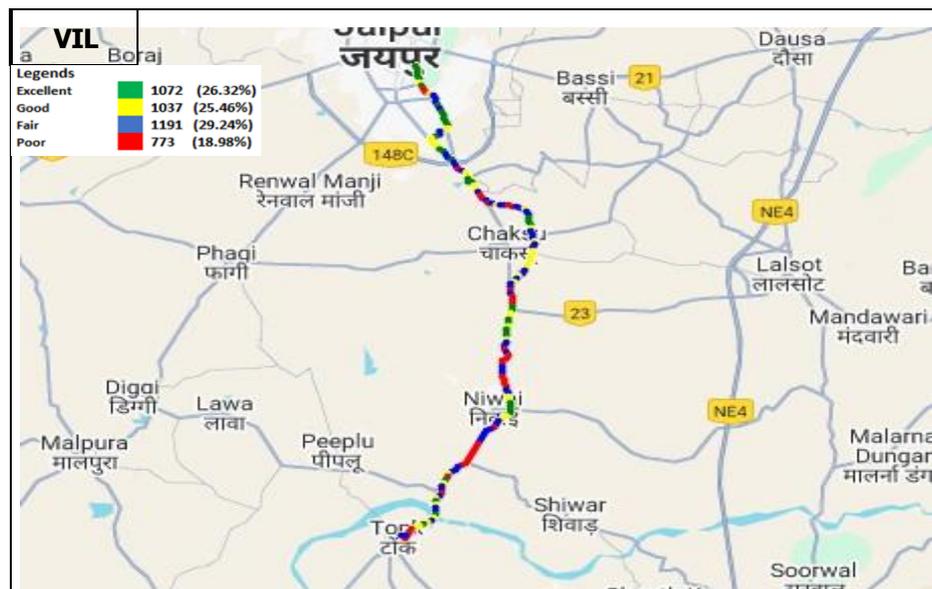
3G/2G Auto Mode:  
Airtel



BSNL

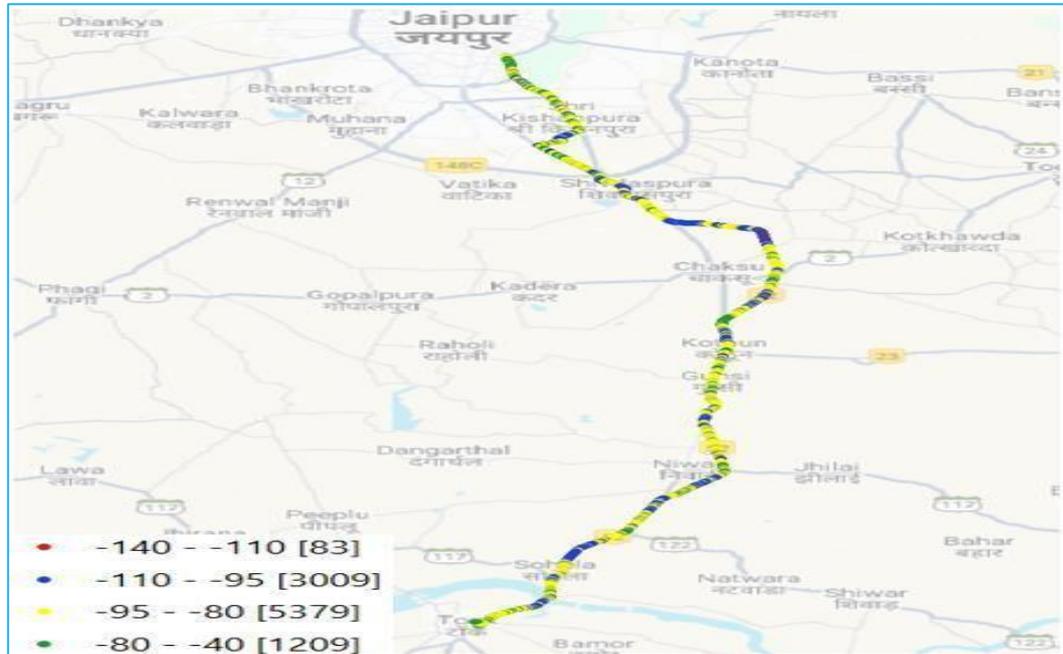


VIL

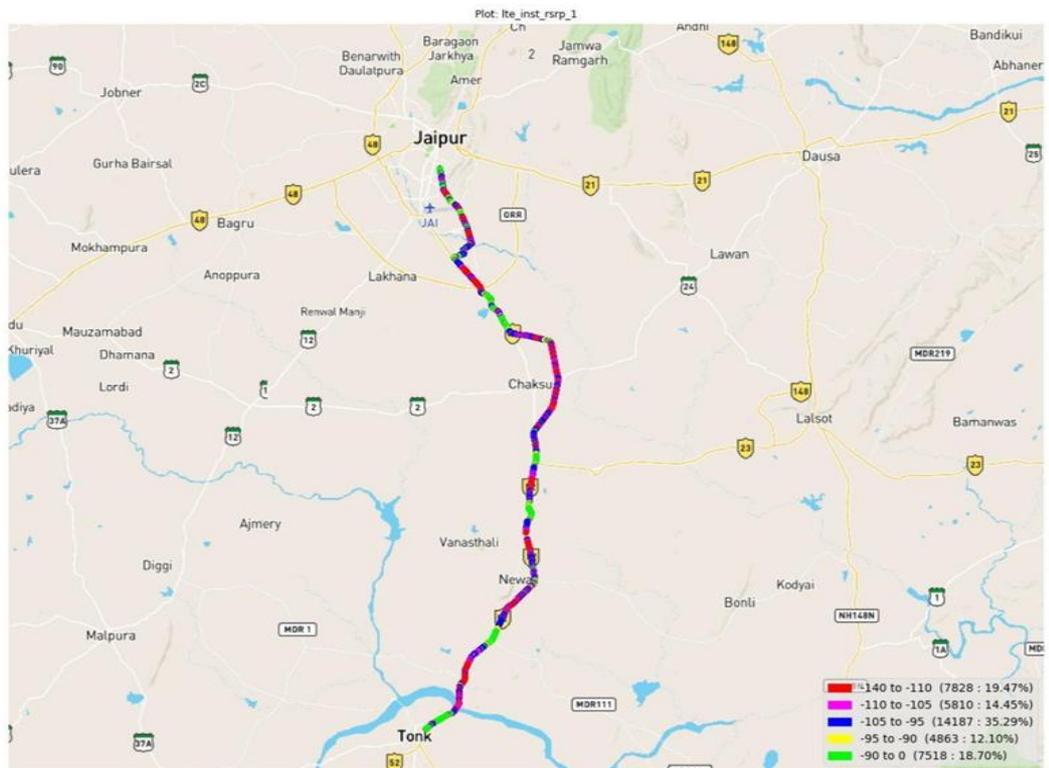


## 5G/4G3G/2G Open Mode:

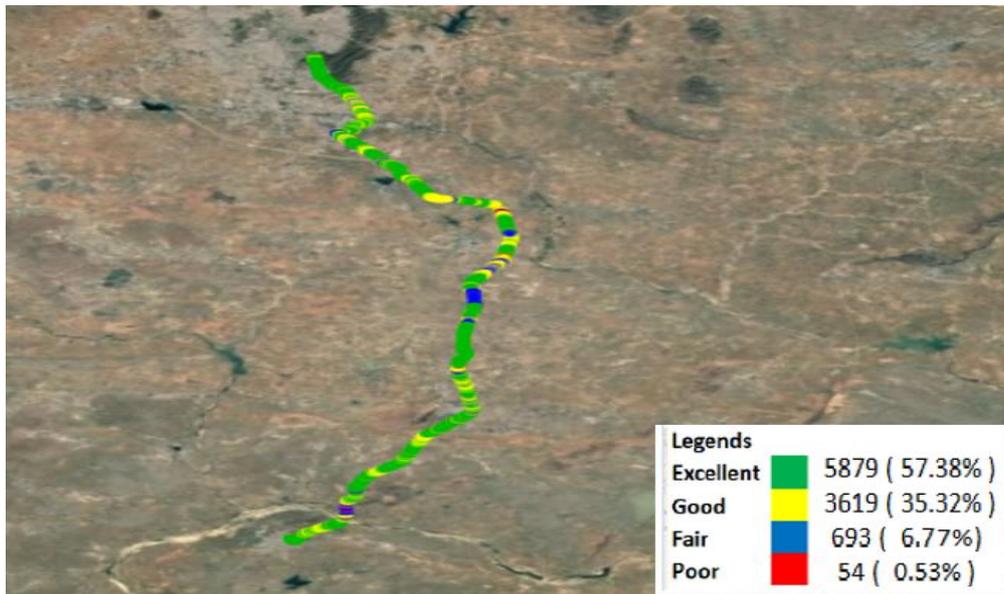
### Airtel



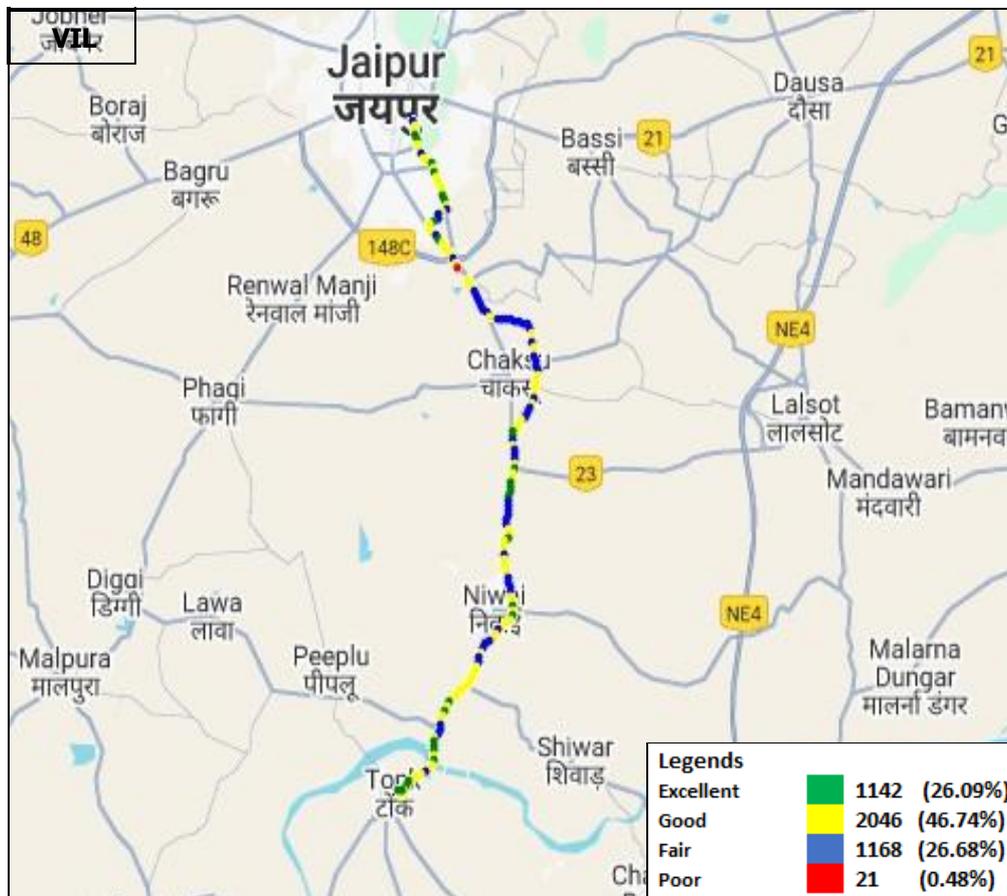
### BSNL



## RJIL



## VIL



### 3.3 QoS performance analysis- Tonk City

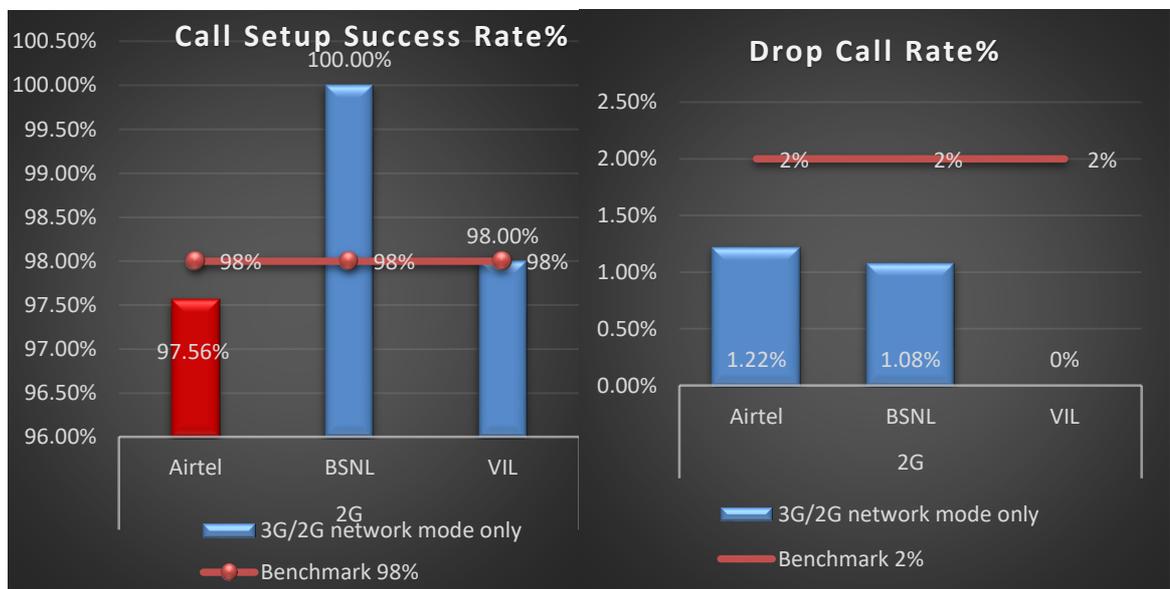
#### Overview

This section provides summary of overall QoS performance of the telecom service provider's network in the Tonk City, Rajasthan LSA by aggregating the results of drive tests conducted in month of June-2025 covering city drive, and hotspots

Voice performance

**(a) Voice Call Performance in 3G/2G network mode only:** 3G/2G network mode testing has been done to reflect experience for respective users as they have only 3G/2G compatible handsets.

Parameters	Service Provider		
	3G/2G network mode only		
	AIRTEL	BSNL	VIL
Call Attempts	82	92	89
Call Setup Success Rate %	97.56	100	100
Drop Call Rate %	1.22	1.08	0.00
Call Setup Time-Average (Second)	3.42	3.26	2.85
Handover Success Rate %	99.26	99.62	95.59



**Table-3:** Summary of voice call performance in 3G/2G network mode only.

**Figure-2:** Call setup success rate and drop call rate performance.

Number of unique cell id's covered in Voice test- Technology wise			
Technology	Service Provider		
	3G/2G network mode only		
	AIRTEL	BSNL	VIL
3G	NA	34	NA
2G	78	33	32

**Table-4:** Technology wise number of network cell id's latched during drive test.

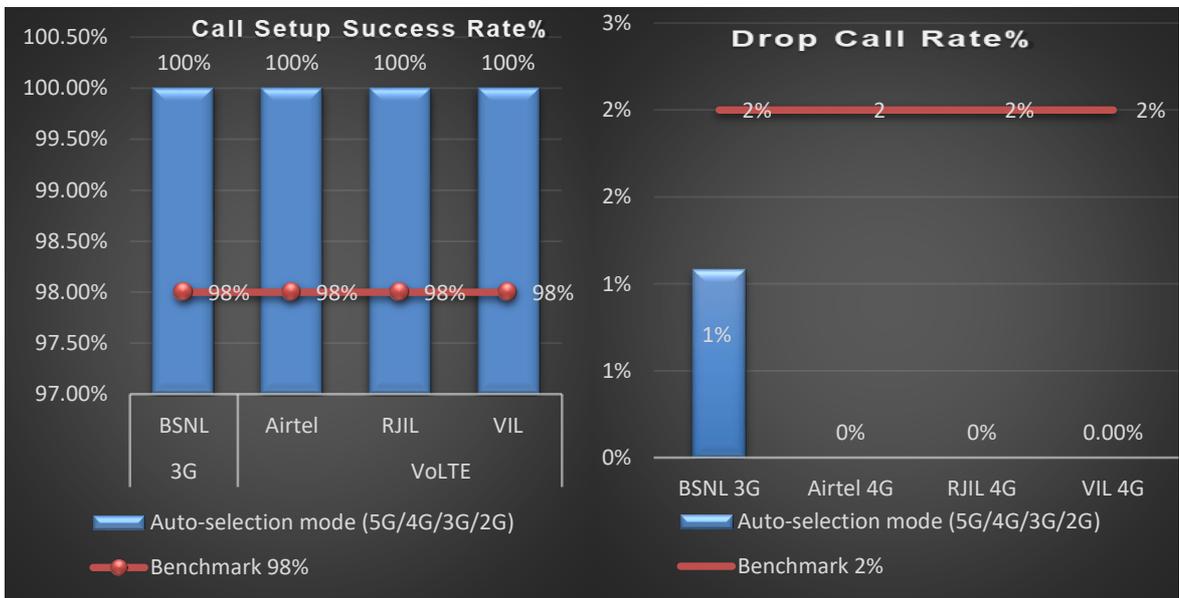
**Note-**

- RJIL does not have 3G/2G network.
- NA- Service provider doesn't provide services in respective technology.

## Voice Call Performance in auto network selection mode(5G/4G/3G/2G)

Parameters	Service Provider			
	Auto-selection mode (5G/4G/3G/2G)			
	AIRTEL	BSNL	RJIL	VIL
Call Attempts	95	91	91	93
Call Setup Success Rate %	100%	100%	100%	100%
Drop Call Rate %	0.00	1.08	0.00	0.00
Call Setup Time-Average (Second)	1.8	2.95	0.74	0.36
Handover Success Rate %	99.20%	100	100	99.68

**Table-5:** Summary of voice call performance in network auto-selection mode.



**Figure-3:** Performance for call setup success rate and drop call rate.

Parameter	Service Provider			
	Mobile-to-Mobile (5G/4G - Open Mode)			
	AIRTEL	BSNL	RJIL	VIL
Call Established (within service provider Network)	93	NA	95	100
Number of silence call for >4 Sec	1	NA	0	0
Silence Call Rate %	1.08	NA	0.00	0.00
Number of silence instances for >4 Sec	1	NA	0	0
Number of silence instances for >3 Sec	3	NA	2	0
Number of silence instances for >2 sec	5	NA	5	0
RTP Jitter (4G & 5G) in ms	3.76	NA	8.96	32.05
Packet loss Rate Downlink %	0.23	NA	0.15	0.20
Packet loss Rate Uplink %	0.17	NA	0.19	0.20

**Table-6:** Summary of silence instances & packet loss rate for mobile-to-mobile call.

<b>Note-</b>				
<ul style="list-style-type: none"> <li>• <b>NA- Due to unavailability of packet switched (VoLTE &amp; VoNR) network in BSNL, silence instances are not captured.</b></li> </ul>				
<b>Number of unique cell id's covered in Voice test- Technology wise</b>				
<b>Technology</b>	<b>Service Provider</b>			
	<b>Auto-selection mode (5G/4G/3G/2G)</b>			
	<b>AIRTEL</b>	<b>BSNL</b>	<b>RJIL</b>	<b>VIL</b>
<b>5G</b>	0	-	48	NA
<b>4G</b>	126	33	94	98
<b>3G</b>	NA	34	NA	NA
<b>2G</b>	0	33	NA	0

**Table-7:** Technology wise number of network cell id's latched during drive test.

<b>Note-</b>	
<ul style="list-style-type: none"> <li>• NA- Service provider doesn't provide services on respective technology.</li> </ul>	

**(b) Mean Opinion Score (MOS) performance for speech quality:**

Mean opinion score indicates quality of speech observed during the drive test across different technologies. This parameter has been calculated for mobile-to-mobile calls made within same operator network in auto mode (5G/4G/3G/2G). As per ITU-T Recommendation P.863.1, MOS score values means: 5-Excellent, 4-Good, 3-Fair, 2-Poor, 1-Bad.

<b>Speech Quality (MOS) distribution</b>	<b>Service Provider</b>			
	<b>AIRTEL</b>	<b>BSNL</b>	<b>RJIL</b>	<b>VIL</b>
<b>Total Number of MOS Samples for calls in table-6</b>	1217	NA	846	671
<b>Speech Quality (Average MOS Score)</b>	4.11	NA	4.36	4.05
<b>Number of samples with MOS <math>\geq 4</math> to <math>&lt; 5</math> (Excellent)</b>	1141	NA	771	530
<b>Number of samples with MOS <math>\geq 3</math> to <math>&lt; 4</math> (Good)</b>	70	NA	53	128
<b>Number of samples with MOS <math>\geq 2</math> to <math>&lt; 3</math> (Fair)</b>	3	NA	16	10
<b>Number of samples with MOS <math>\geq 1</math> to <math>&lt; 2</math> (Poor)</b>	3	NA	6	3
<b>%age of samples with MOS <math>\geq 4</math> to <math>&lt; 5</math> (Excellent)</b>	93.75%	NA	91.13%	78.99%
<b>%age of samples with MOS <math>\geq 3</math> to <math>&lt; 4</math> (Good)</b>	5.75%	NA	6.26%	19.08%
<b>%age of samples with MOS <math>\geq 2</math> to <math>&lt; 3</math> (Fair)</b>	0.25%	NA	1.89%	1.49%
<b>%age of samples with MOS <math>\geq 1</math> to <math>&lt; 2</math> (Poor)</b>	0.25%	NA	0.72%	0.45%

**Table-8:** Summary of speech quality (MOS) samples.

**(b) Data performance**

**Data Parameters (Auto-selection mode- 5G/4G/3G/2G)**

Parameters		Service Provider			
		Auto-selection mode (5G/4G/3G/2G)			
		AIRTEL	BSNL	RJIL	VIL
Download Throughput (Mbits/s)	Average	128.48	14.85	322.52	19.1
	80th Percentile	192.46	28.25	520.01	31.2
	20th Percentile	47.3	2.6	118.79	5.53
Upload Throughput (Mbits/s)	Average	26.87	3.34	74.59	7.82
	80th Percentile	42.49	5.95	111.17	15
	20th Percentile	12.27	1.12	39.51	1.63
Latency (ms)	50th Percentile	37.5	40	24.5	23.5

**Table-11:** Summary of data performance in network auto-selection mode.

Number of unique cell id's covered in Data test- Technology wise				
Technology	Service Provider			
	Auto-selection mode (5G/4G/3G/2G)			
	AIRTEL	BSNL	RJIL	VIL
5G	0	NA	75	NA
4G	126	34	0	74
3G	NA	33	NA	NA
2G	0	33	NA	0

**Table-12:** Technology wise number of network cell id's latched during drive test.

**Network Technology:** This section represents time spent on various network technologies.

(3G/2G Mode)

Technology	Service Provider		
	AIRTEL	BSNL	VIL
3G	NA	7.1	NA
2G	100.00%	92.9	100%
Limited Service	0.00%	0	0.00%

**Table-14:** Time spent on technology during drive test 3G/2G network mode only.

(5G/4G/3G/2G Mode)

Technology	Service Provider			
	AIRTEL	BSNL	RJIL	VIL
5G	0.00%	-	16.81%	NA
4G	100.00%	-	83.19%	94.02%
3G	NA	7.76	NA	NA
2G	0.00%	92.24	NA	5.98%
Limited Service	0.00%	NA	0.00%	0.00%

**Table-18:** Time spent on technology during drive test.

### 3.4 Hotspots

Hotspot testing has been done on 25 June & 26 June 2025. Five locations have been tested in the city.

#### (a) Locations



Figure- 23: Hotspot locations

#### (b) Hotspot covered

1. **Bus Stand, Tonk**
2. **collectorate, Tonk**
3. **Govt. Hospital, Tonk**
4. **Govt PG Collage, Tonk**
5. **Kafila Bazar, Tonk**

#### (c) Voice performance

Bus Stand, Tonk				
Parameters	Service Provider			
	Auto-selection mode (5G/4G/3G/2G)			
	AIRTEL	BSNL	RJIL	VIL
Call Attempt	10	10	10	10
Call Setup Success Rate %	100.00%	100%	100.00	100.00
Drop Call Rate %	0.00%	0	0.00	0.00
Call Setup Time-Average (Sec)	1.79	3.41	0.65	0.24

Table-21: Summary of voice call performance in network auto-selection mode 5G/4G/3G/2G).

<b>Collectorate, Tonk</b>				
<b>Parameters</b>	<b>Service Provider</b>			
	<b>Auto-selection mode (5G/4G/3G/2G)</b>			
	<b>AIRTEL</b>	<b>BSNL</b>	<b>RJIL</b>	<b>VIL</b>
<b>Call Attempt</b>	10	10	10	10
<b>Call Setup Success Rate %</b>	100.00%	100%	100.00	100.00
<b>Drop Call Rate %</b>	0.00%	0	0.00	0.00
<b>Call Setup Time-Average (Sec)</b>	1.81	3.54	0.68	0.33

**Table-22:** Summary of voice call performance in network auto-selection mode 5G/4G/3G/2G).

<b>Govt. Hospital, Tonk</b>				
<b>Parameters</b>	<b>Service Provider</b>			
	<b>Auto-selection mode (5G/4G/3G/2G)</b>			
	<b>AIRTEL</b>	<b>BSNL</b>	<b>RJIL</b>	<b>VIL</b>
<b>Call Attempt</b>	10	10	10	10
<b>Call Setup Success Rate %</b>	100.00%	100%	100.00	100.00
<b>Drop Call Rate %</b>	0.00%	0	0.00	0.00
<b>Call Setup Time-Average (Sec)</b>	1.93	3.35	0.86	3.16

**Table-23:** Summary of voice call performance in network auto-selection mode 5G/4G/3G/2G).

<b>Govt PG Collage, Tonk</b>				
<b>Parameters</b>	<b>Service Provider</b>			
	<b>Auto-selection mode (5G/4G/3G/2G)</b>			
	<b>AIRTEL</b>	<b>BSNL</b>	<b>RJIL</b>	<b>VIL</b>
<b>Call Attempt</b>	10	10	10	10
<b>Call Setup Success Rate %</b>	100.00%	100%	100.00	100.00
<b>Drop Call Rate %</b>	0.00%	0	0.00	0.00
<b>Call Setup Time-Average (Sec)</b>	1.89	3.67	0.71	0.31

**Table-24:** Summary of voice call performance in network auto-selection mode 5G/4G/3G/2G).

<b>Kafila Bazar, Tonk</b>				
<b>Parameters</b>	<b>Service Provider</b>			
	<b>Auto-selection mode (5G/4G/3G/2G)</b>			
	<b>AIRTEL</b>	<b>BSNL</b>	<b>RJIL</b>	<b>VIL</b>
<b>Call Attempt</b>	10	10	10	10
<b>Call Setup Success Rate %</b>	100.00%	100%	100.00	100.00
<b>Drop Call Rate %</b>	0.00%	0	0.00	0.00
<b>Call Setup Time-Average (Sec)</b>	1.76	3.2	0.52	0.32

**Table-25:** Summary of voice call performance in network auto-selection mode 5G/4G/3G/2G).

## (d) Data performance

### Auto-selection mode 5G/4G/3G/2G

Overall Data Performance				
Parameters	Service Provider			
	Auto-selection mode (5G/4G/3G/2G)			
	AIRTEL	BSNL	RJIL	VIL
<b>Download Throughput Average (Mbits/s)</b>	<b>465.04</b>	<b>24.19</b>	<b>438.40</b>	<b>31.55</b>
Download Throughput 80th Percentile (Mbit/s)	273.46	32.1	534.8	51.16
Download Throughput 20th Percentile (Mbit/s)	45.29	7.85	301.75	8.89
Download Session Setup Success Rate %	100.00%	100	100.00	100.00
<b>Upload Throughput Average (Mbits/s)</b>	<b>41.73</b>	<b>5.39</b>	<b>132.95</b>	<b>4.86</b>
Upload Throughput 80th Percentile (Mbit/s)	41.04	7.8	163.81	7.12
Upload Throughput 20th Percentile (Mbit/s)	13.97	1.3	102.32	1.95
Upload Session Setup Success Rate %	100.00%	100	100.00	100.00
Web Browsing Delay (Second)	9.08	38ms	2.42	6.37
Youtube Initial Buffer Delay (Second)	0.91	2.7	0.46	1.35
Latency (ms)-50th Percentile	41	45	24.5	22.30
Jitter (ms)	3.77	19	-	9.55
Packet Loss Rate%	0.06%	0	-	0.00
Packet Loss Rate- 90th percentile	45.59	0	-	0.00

**Table-32:** Overall Summary of Data performance in network auto-selection mode (5G/4G/3G/2G).

Bus Stand , Tonk				
Parameters	Service Provider			
	Auto-selection mode (5G/4G/3G/2G)			
	AIRTEL	BSNL	RJIL	VIL
Download Throughput Average (Mbits/s)	417.50	26.93	265.71	46.05
Download Session Setup Success Rate %	100.00%	100	100.00	100.00
Upload Throughput Average (Mbits/s)	33.94	6.2	73.26	6.44
Upload Session Setup Success Rate %	100.00%	100	100.00	100.00
Web Browsing Delay (Second)	14.5	35ms	3.13	7.37
Youtube Initial Buffer Delay (Second)	0.88	2.7	0.57	1.09
Latency (ms)-50th Percentile	44.5	45ms	23	21.00
Jitter (ms)	5.12	16ms	-	7.52
Packet Loss Rate%	0.20	0	-	0.00

**Table-33:** Summary of Data performance in network auto-selection mode (5G/4G/3G/2G)

Collectorate , Tonk				
Parameters	Service Provider			
	Auto-selection mode (5G/4G/3G/2G)			
	AIRTEL	BSNL	RJIL	VIL
Download Throughput Average (Mbits/s)	425.08	20.3	451.00	3.72
Download Session Setup Success Rate %	100.00%	100	100.00	100.00
Upload Throughput Average (Mbits/s)	40.62	4.9	132.34	3.87
Upload Session Setup Success Rate %	100.00%	100	100.00	100.00
Web Browsing Delay (Second)	8.02	48ms	1.98	2.50
Youtube Initial Buffer Delay (Second)	0.9	3.6	0.39	1.69
Latency (ms)-50th Percentile	40.5	48	34.50	22.00
Jitter (ms)	2.79	19ms	-	10.76
Packet Loss Rate%	0.00%	0	-	0.00

**Table-34:** Summary of Data performance in network auto-selection mode (5G/4G/3G/2G).

Govt. Hospital ,Tonk				
Parameters	Service Provider			
	Auto-selection mode (5G/4G/3G/2G)			
	AIRTEL	BSNL	RJIL	VIL
Download Throughput Average (Mbits/s)	556.30	6.92	574.18	27.63
Download Session Setup Success Rate %	100.00%	100	100.00	100.00
Upload Throughput Average (Mbits/s)	63.86	5.1	152.00	4.94
Upload Session Setup Success Rate %	100.00%	100	100.00	100.00
Web Browsing Delay (Second)	6.78	49	1.65	7.41
Youtube Initial Buffer Delay (Second)	0.7	2.9	0.43	1.36
Latency (ms)-50th Percentile	40.5	52	38.50	23.00
Jitter (ms)	3.94	26ms	-	12.40
Packet Loss Rate%	0.00%	0	-	0.00

**Table-37:** Summary of Data performance in network auto-selection mode (5G/4G/3G/2G).

**Note-** "-" Ping tests were failed.

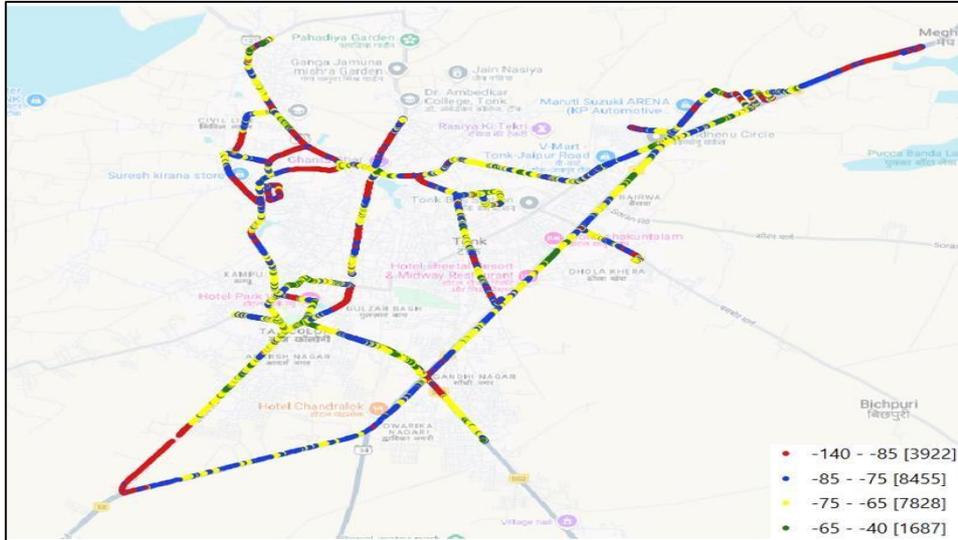
Govt. PG College , Tonk				
Parameters	Service Provider			
	Auto-selection mode (5G/4G/3G/2G)			
	AIRTEL	BSNL	RJIL	VIL
Download Throughput Average (Mbits/s)	354.09	19	443.67	51.48
Download Session Setup Success Rate %	100.00%	100	100.00	100.00
Upload Throughput Average (Mbits/s)	10.46	6.75	151.76	6.79
Upload Session Setup Success Rate %	100.00%	100	100.00	100.00
Web Browsing Delay (Second)	8.5	41	3.02	7.48
Youtube Initial Buffer Delay (Second)	1.09	1.1	.37	1.16
Latency (ms)-50th Percentile	35.5	42	20.50	22.00
Jitter (ms)	3.56	17ms	-	7.12
Packet Loss Rate%	0.00%	0	-	0.00

**Table-38:** Summary of Data performance in network auto-selection mode (5G/4G/3G/2G)

Kafila Bazar , Tonk				
Parameters	Service Provider			
	Auto-selection mode (5G/4G/3G/2G)			
	AIRTEL	BSNL	RJIL	VIL
Download Throughput Average (Mbits/s)	572.21	23.5	457.44	28.87
Download Session Setup Success Rate %	100.00%	100	100.00	100.00
Upload Throughput Average (Mbits/s)	59.79	6.1	155.37	2.25
Upload Session Setup Success Rate %	100.00%	100	100.00	100.00
Web Browsing Delay (Second)	7.58	43	2.30	7.11
Youtube Initial Buffer Delay (Second)	0.99	2.9	0.56	1.43
Latency (ms)-50th Percentile	44	43	21.25	23.50
Jitter (ms)	3.43	17ms	-	9.93
Packet Loss Rate%	0.10%	0	-	0.00

**Table-39:** Summary of Data performance in network auto-selection mode (5G/4G/3G/2G).

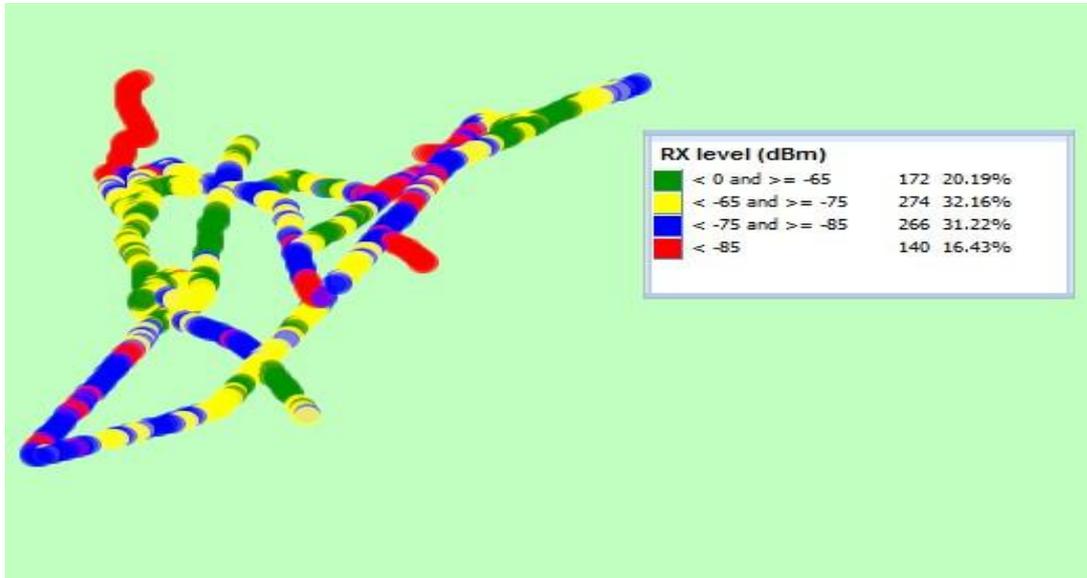
## TSP Wise signal Strength ( Tonk City)



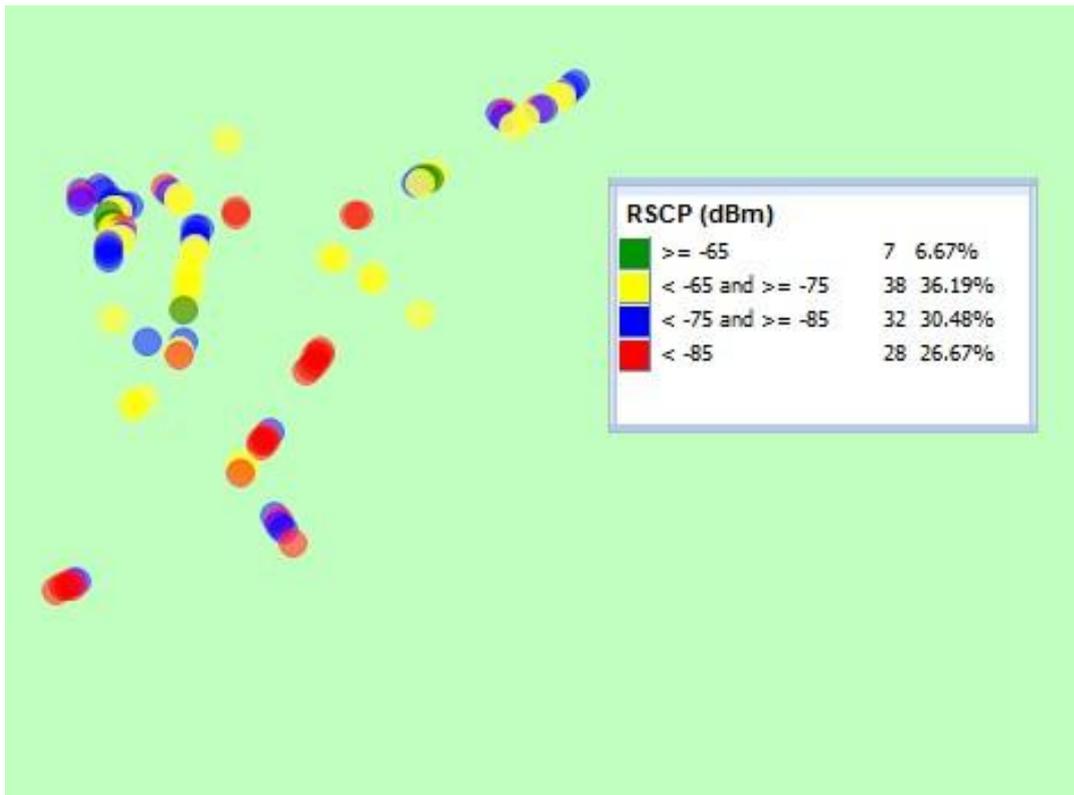
**Figure-25:** Signal strength 3G/2G network mode – AIRTEL.



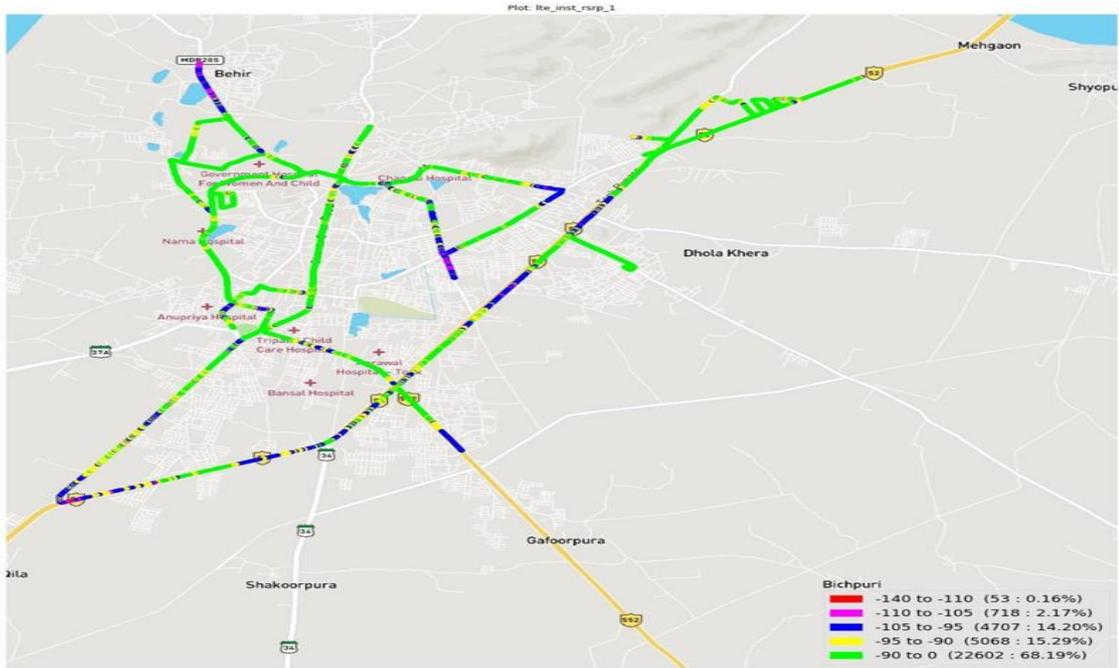
**Figure-28:** Signal strength auto-selection mode 5G/4G/3G/2G – AIRTEL.



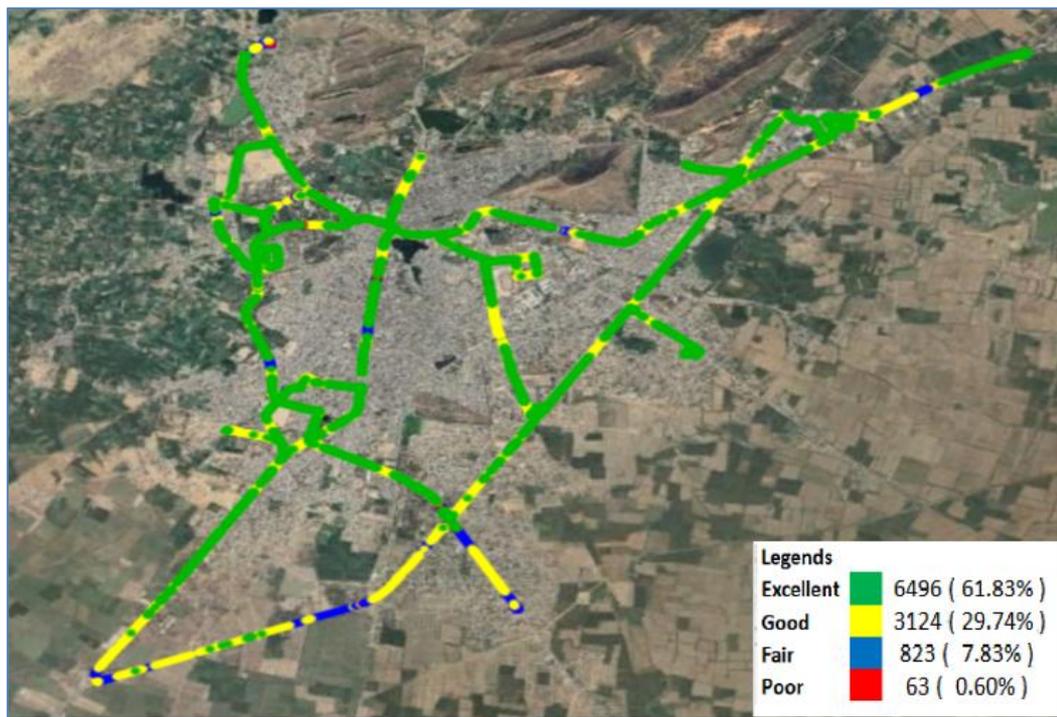
Signal strength 2G network mode – BSNL



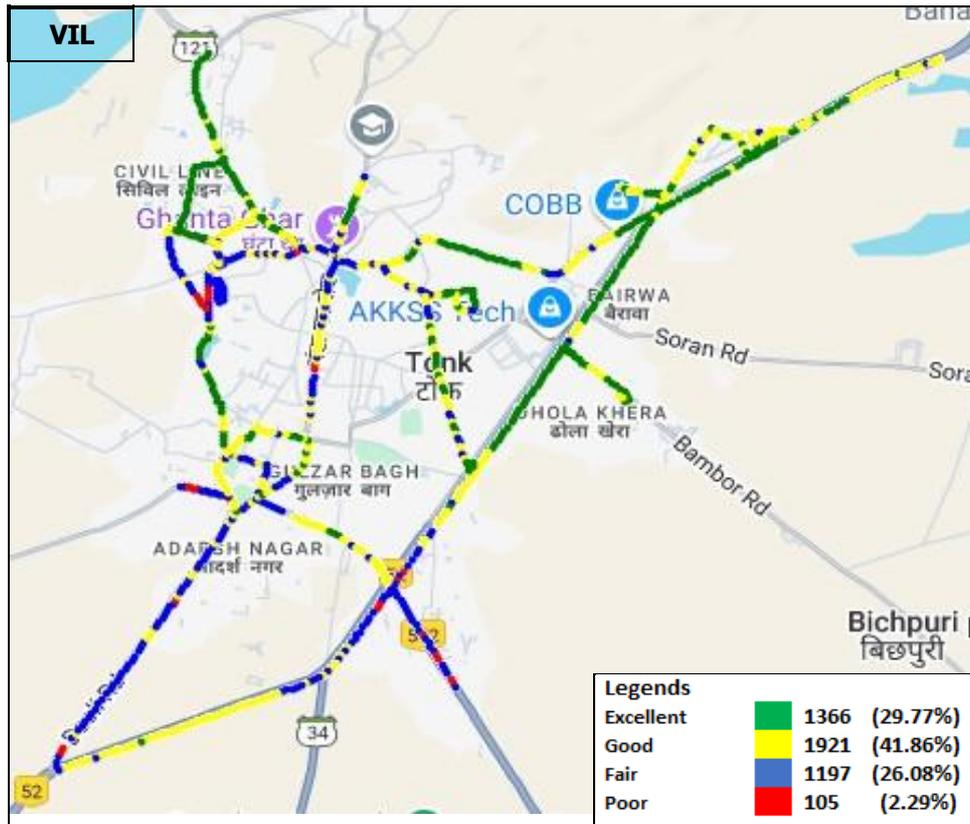
Signal strength 3G network mode – BSNL



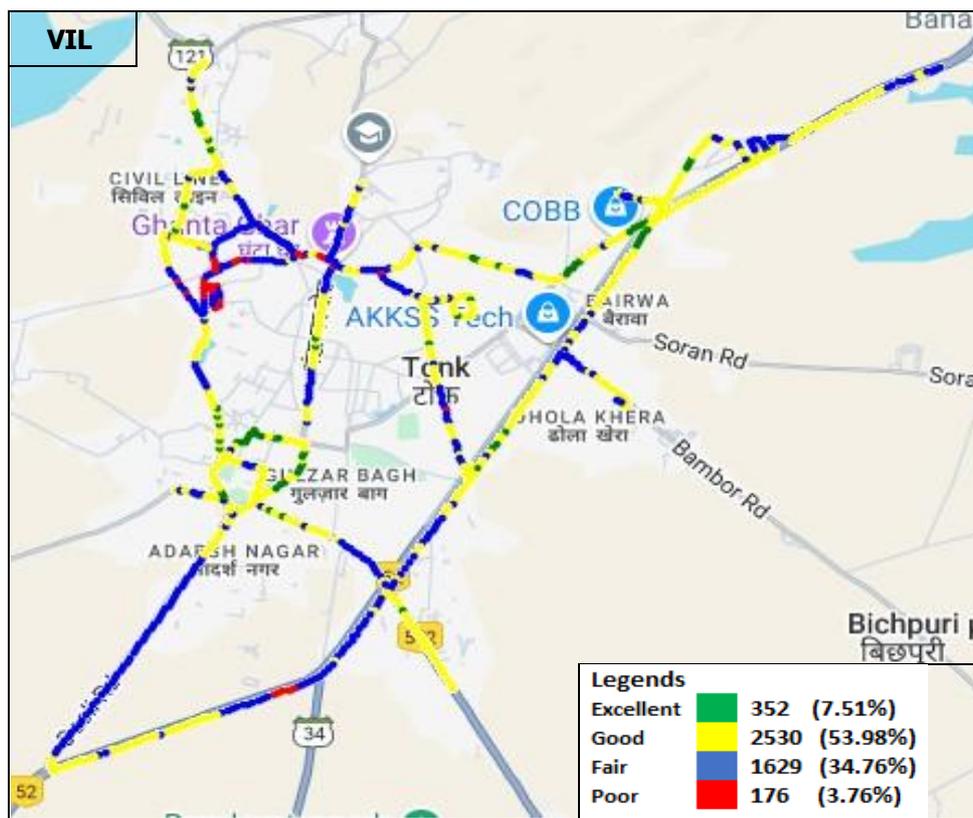
Signal strength 4G network mode – BSNL



Signal strength auto-selection mode 5G/4G/3G/2G – RJIL.



Signal strength 3G/2G network mode – VIL



Signal strength auto-selection mode 5G/4G/3G/2G – VIL.