

4G LAB base station automation test report by RantCell App on Feb 28th and Mar 1st

Transforming Mobile Network testing

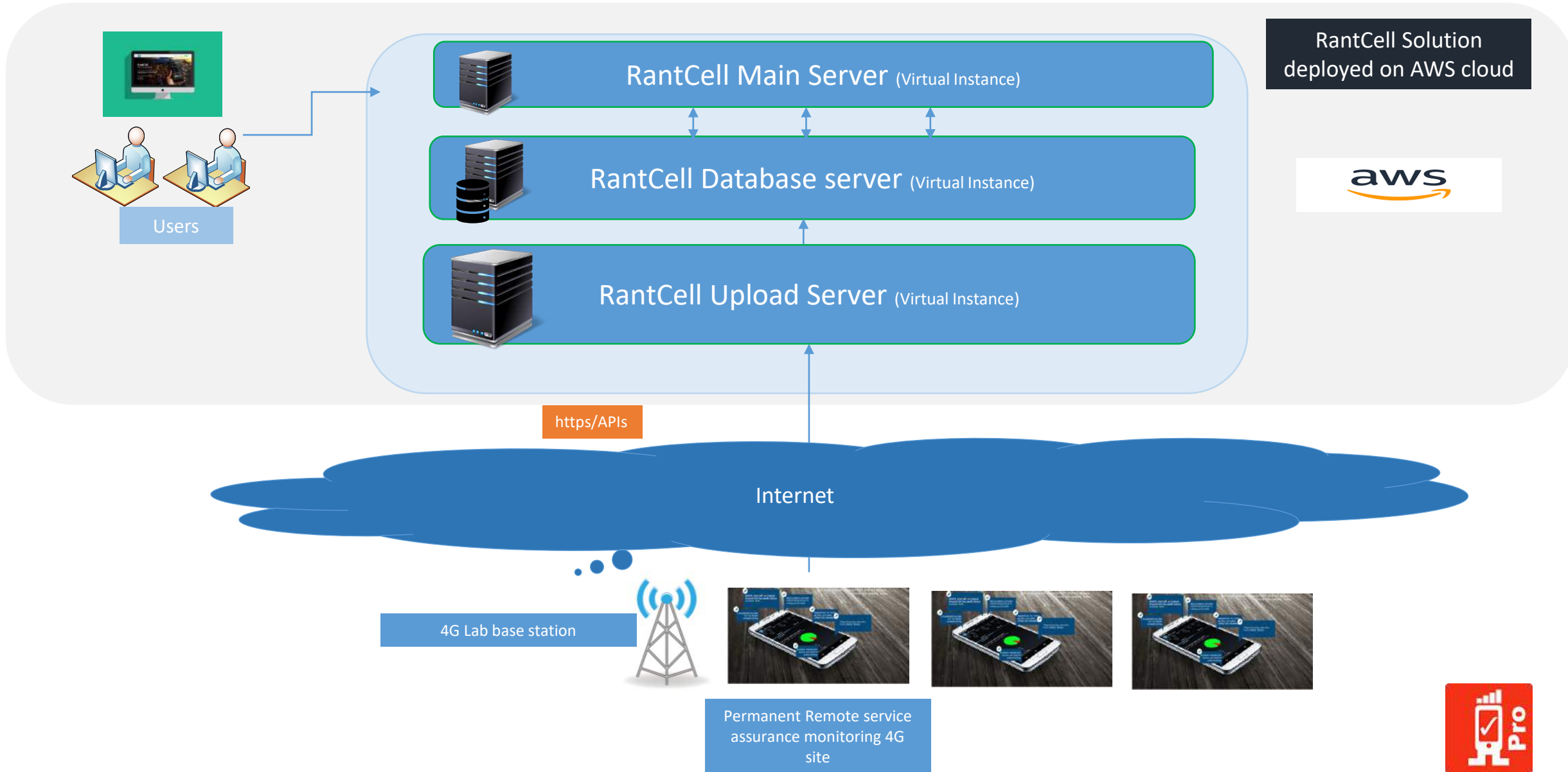
RantCell product of Megron Tech Ltd UK

www.rantcell.com

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Overall setup in 4G Lab and RantCell solution in cloud.



Test environment

- 4G base station
- Test devices:
 - S7one
 - S7Two
 - Google pixel 2 (These devices are remotely controlled using RantCell web-based dashboard)
- Test Duration :
 - Test performed between Feb 28, 2022, 12:00am to Mar 01,2022 , 23:59pm
- Type of tests performed
 - Latency test (Ping 32 byte) (Automated scheduled test every 15mins)
 - FTP test has been performed (Automated scheduled test every 15mins)
 - HTTP test has been performed (Automated scheduled test every 15mins)
 - Call test has been performed (Automated scheduled test every 15mins)
 - SMS test has been performed (Automated scheduled test every 15mins)
 - Stream test has been performed (Automated scheduled)
- 4G base station parameter captured during test.
 - Cell ID: 157440
 - PCI: 14
 - eNB ID: 615
 - LCID: 0
 - LAC: 37030

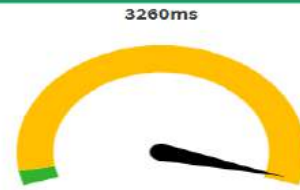


Latency test performed between Feb 28, 2022 12:00 am to Mar 01, 2022 , 23:59 pm ,UK time

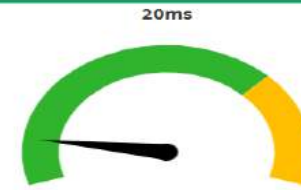
Query Range :27-02-22 23:59:00 - 01-03-22 23:59:00(UTC +00:00) Ping Test Custom Query



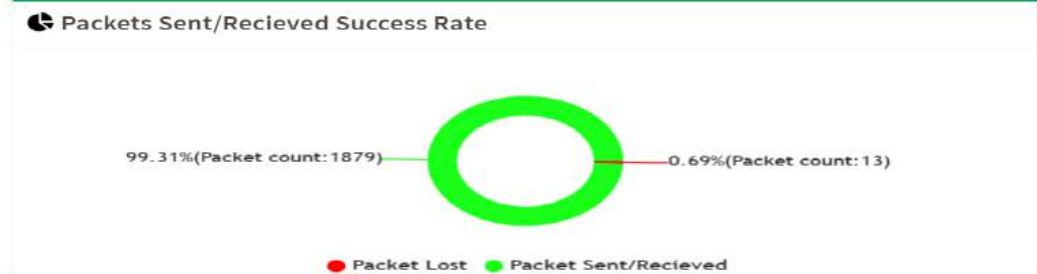
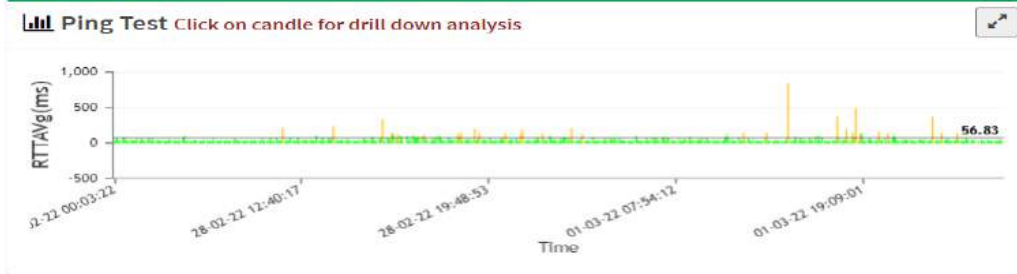
Overall RTT Avg



Overall RTT Maximum



Overall RTT Minimum



Ping Test Summary	
RTT Avg Below 120 ms	93.28%
RTT Avg Above 121 ms	6.09%
Dropped Packets	0.63%
Overall RTT Maximum(ms)	3260
Overall RTT Minimum(ms)	20

Ping Test Summary	
Number of Detected Operators	1
Operator Names	Ee
Overall RTT Avg(ms)	56.83
Total Test Failed Count	3
Total Test Conducted	476

- **Latency Test :**
- **Stability : 99.31% ping success rate**
- **RTT Average(ms) : 56.83**
- **RTT Max(ms) : 3260**
- **RTT Min(ms) : 20**
- **Total number of tests conducted : 476**
- **Number of failed count: 3**

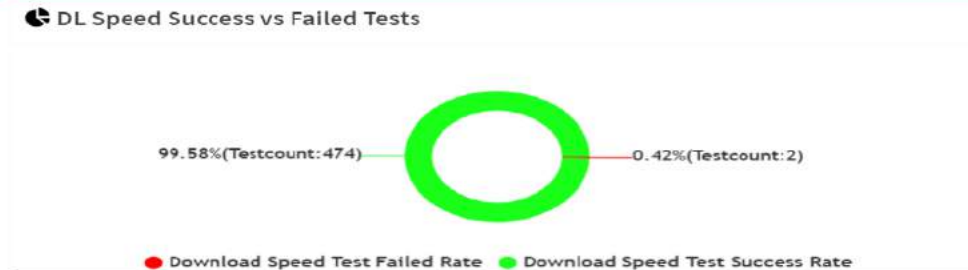
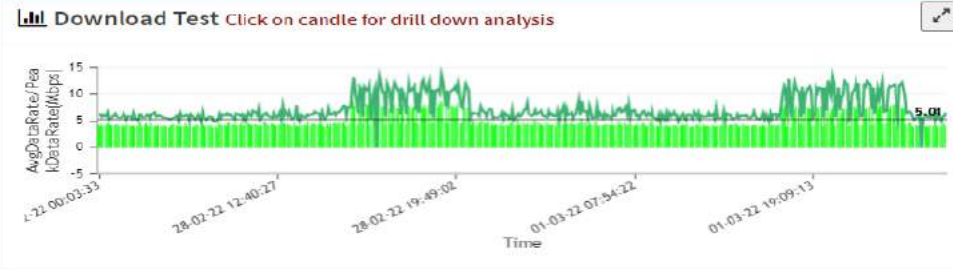
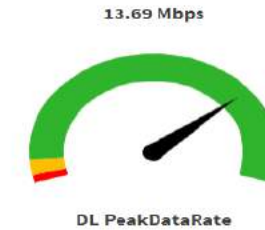
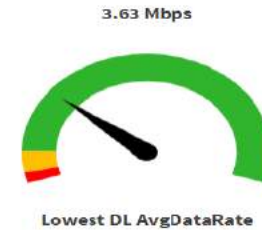
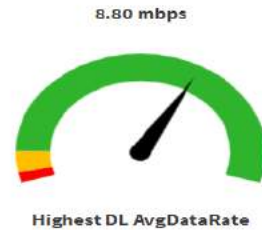


Download speed test performed between Feb 28, 2022 12:00am to Mar 01, 2022, 23:59pm UK Time

Query Range :27-02-22 23:59:00 - 01-03-22 23:59:00(UTC +00:00)

Download Test

Custom Query



Download Test Summary	
Average DL DataRate Above 1.2 Mbps	99.58%
Average DL DataRate Between 0.4 Mbps to 1.29 Mbps	0.00%
Average DL DataRate Between 0 Mbps to 0.4 Mbps	0.42%
Highest DL AvgDataRate (Mbps)	8.80
Lowest DL AvgDataRate(Mbps)	3.63

Download Test Summary	
Number of Detected Operators	1
Operator Names	Ee
Overall DL AvgDataRate(Mbps)	5.01
Total Test Failed Count	2
Total Test Conducted	476

- Download throughput (FTP)

- Total number of tests conducted: **476**
- Number of failed count : **2**
- Overall DL average data rate : **5.01 Mbps** (Average value computed for all the 476 download throughput tests)
- Highest DL average data rate : **8.80 Mbps** (Highest average download throughput recorded among 476 tests)
- Lowest DL average data rate : **3.63 Mbps** (Lowest average download throughput recorded among 476 tests)
- DL Peak data rate: **13.69 Mbps** (Peak download throughput recorded among 476 tests)

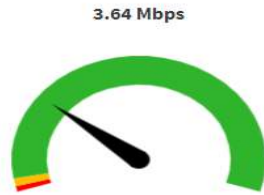


Upload speed test performed between Feb 28, 2022, 12.00am to Mar 01, 2022, 23:59pm UK Time

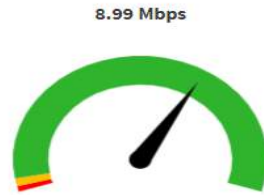
Query Range :27-02-22 23:59:00 - 01-03-22 23:59:00(UTC +00:00)

Upload Test

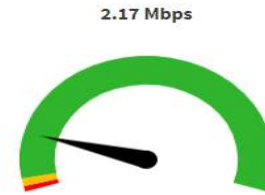
Custom Query



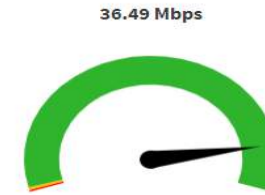
Overall UL AvgDataRate



Highest UL AvgDataRate

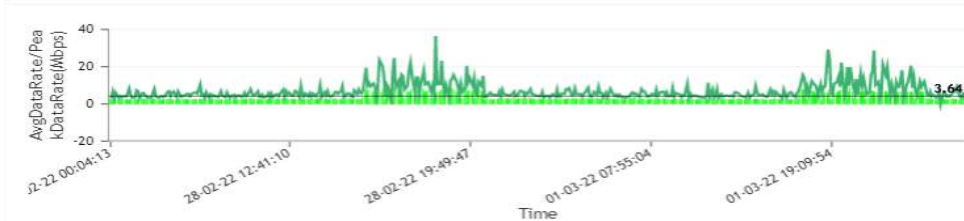


Lowest UL AvgDataRate



UL PeakDataRate

Upload Test Click on candle for drill down analysis



UL Speed Success vs Failed Tests



Upload Test Summary

Average ULData Rate Above 0.5 Mbps	99.58%
Average UL DataRate Between 0.2 Mbps to 0.49 Mbps	0.00%
Average UL DataRate Below 0.2 Mbps	0.42%
Highest UL AvgDataRate(Mbps)	8.99
Lowest UL AvgDataRate(Mbps)	2.17

Upload Test Summary

Number of Detected Operators	1
Operator Names	Ee
Overall UL AvgDataRate(Mbps)	3.64
Total Test Failed Count	2
Total Test Conducted	476

Upload throughput (FTP)

- Total number of tests conducted: **476**
- Number of failed count: **2**
- Overall UL average data rate : **3.64 Mbps** (Average value computed for all the 476 upload throughput tests)
- Highest UL average data rate : **8.99 Mbps** (Highest average upload throughput recorded among 476 tests)
- Lowest UL average data rate : **2.17 Mbps** (Lowest average upload throughput recorded among 476 tests)
- UL peak data rate : **36.49 Mbps** (Peak upload throughput recorded among 476 tests)



HTTP Download test performed between Feb 28, 2022 12.00am to Mar 01, 2022, 23:59pm UK Time

Query Range :27-02-22 23:59:00 - 01-03-22 23:59:00(UTC +00:00)

HTTP Download Test

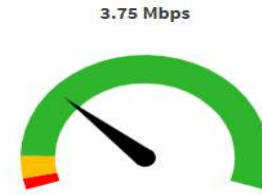
Custom Query



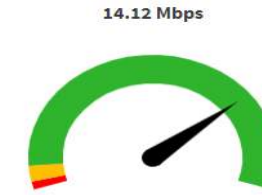
Overall HTTP DL AvgDataRate



Highest HTTP DL AvgDataRate



Lowest HTTP DL AvgDataRate



HTTP DL PeakDataRate

HTTP Download Test Click on candle for drill down analysis



HTTPDownloadss Success vs Failed Tests



HttpDownload Test Summary

Average HTTP DL DataRate Above 1.2 Mbps	99.06%
Average HTTP DL DataRate between 0.4 Mbps to 1.29 Mbps	0.00%
Average HTTP DL DataRate Between 0 Mbps to 0.4 Mbps	0.94%
Highest HTTP DL AvgDataRate(Mbps)	8.53
Lowest HTTP DL AvgDataRate(Mbps)	3.75

HttpDownlaod Test Summary

Number of Detected Operators	1
Operator Names	Ee
Overall HTTP DL AvgDataRate(Mbps)	4.76
Total Test Failed Count	4
Total Test Conducted	426

HTTP Download test:

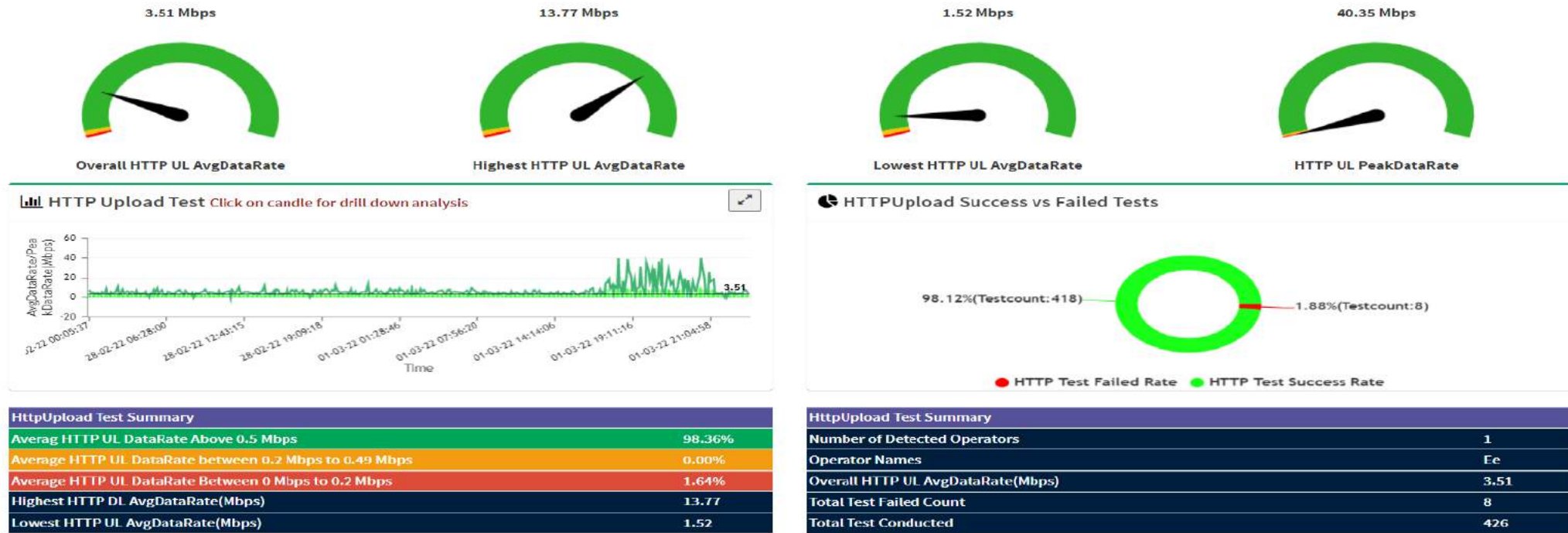
Total number of tests conducted: **426**

- Number of failed count : **4**
- Overall HTTP DL average data rate : **4.76 Mbps** (Average value computed for all the 426 download throughput tests)
- Highest HTTP DL average data rate : **8.53 Mbps** (Highest average download throughput recorded among 426 tests)
- Lowest HTTP DL average data rate : **3.75 Mbps** (Lowest average download throughput recorded among 426 tests)
- HTTP DL PeakDataRate: **14.12 Mbps** (Peak download throughput recorded among 426 tests)



HTTP Upload test performed between Feb 28, 2022 12.00am to Mar 01, 2022, 23:59pm UK Time

Query Range :27-02-22 23:59:00 - 01-03-22 23:59:00(UTC +00:00) HTTP Upload Test Custom Query



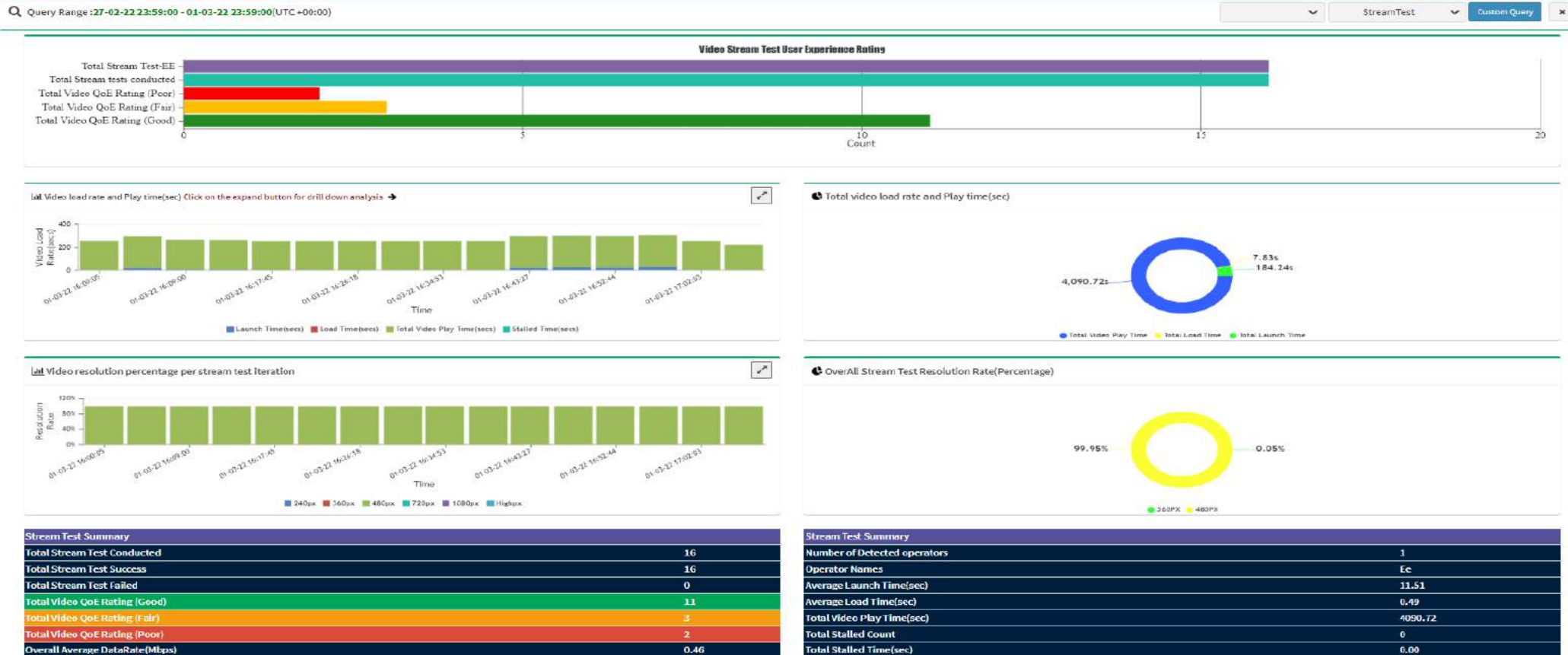
HTTP Upload test:

Total number of tests conducted: **426**

- Number of failed count : **8**
- Overall HTTP UL average data rate : **3.51 Mbps** (Average value computed for all the 426 upload throughput tests)
- Highest HTTP UL average data rate : **13.77 Mbps** (Highest average upload throughput recorded among 426 tests)
- Lowest HTTP UL average data rate : **1.52 Mbps** (Lowest average upload throughput recorded among 426 tests)
- HTTP UL PeakDataRate: **40.35 Mbps** (Peak upload throughput recorded among 426 tests)



YouTube experience test performed between Feb 28, 2022 12.00am to Mar 01, 2022, 23:59pm UK Time



Stream Test:

Total number of tests conducted: **16**

- Number of failed count : **0**
- Video experience good rating: **11**
- Video experience fair rating : **3**
- Video experience poor rating : **2**



Call test performed between Feb 28, 2022 12.00am to Mar 01, 2022, 23:59pm UK Time

Query Range : 27-02-22 23:59:00 - 01-03-22 23:59:00(UTC +00:00)

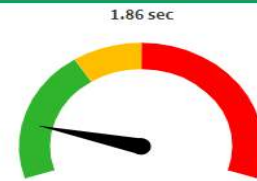
Call Test Custom Query



Average Call SetupTime

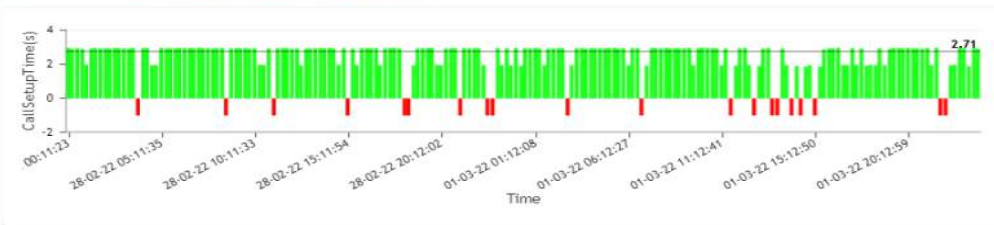


Highest Call SetupTime

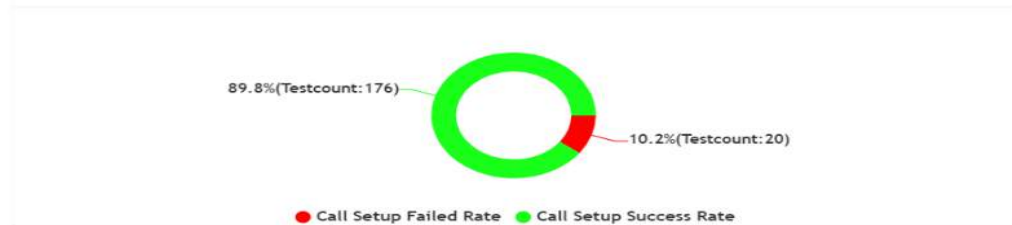


Lowest Call SetupTime

Call Test Click on candle for drill down analysis



Call Setup Success Rate



Call Test Summary	
Call SetupTime Between 0 to 4.5 sec	100.00%
Call SetupTime Between 4.5 to 6.5 sec	0.00%
Call Setup Time Above 6.5 sec	0.00%
Highest Call SetupTime Recorded (sec)	2.97
Lowest Call SetupTime Recorded (sec)	1.86
Total Call Success Count	176
Total Call Attempted Count	196

Call Test Summary	
Number of Detected Operators	1
Operator Names	Ee
Average Call SetupTime (sec)	2.71
Total Call Failed Count	20
Total Dropped Call Count	0
Total Aborted Call Count	0
Total NoNetwork Failed Call Count	0
Total Call Setup Failed Count	20

Call test:

- Total call Attempted: 196
- Total Call Success count: 176
- Call setup success rate : 89.8 %
- Highest call Setup time: 2.97 sec
- Lowest Call Setup time: 1.86 sec
- Number of failed count : 20 (Failure cause : call setup failure)

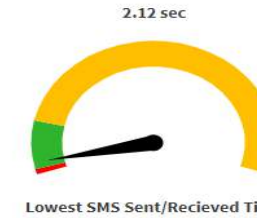
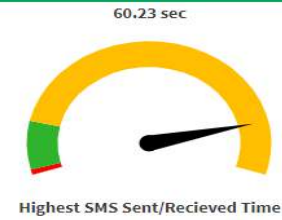
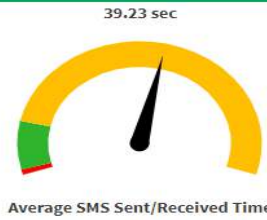


SMS test performed between Feb 28, 2022 12.00am to Mar 01, 2022, 23:59pm UK Time

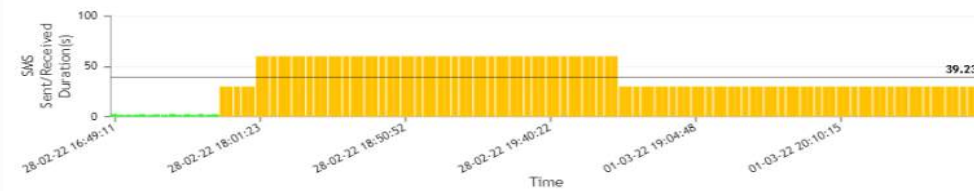
Query Range :27-02-22 23:59:00 - 01-03-22 23:59:00(UTC +00:00)

SMS Test

Custom Query

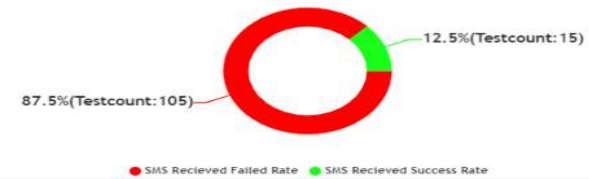


SMS Test Click on candle for drill down analysis



SMS Test Summary	
Total SMS Sent/Received Between 1 to 10 sec	12.50%
Total SMS Sent/Received Between 10 to 180 sec	87.50%
Total SMS Sent/Received Less than 1 sec	0.00%
Total SMS Recieved Failed Count	105
Total SMS Sent/Recieved Success Count	15
Total SMS Sent/Received Failed Count	105
Highest SMS Sent/Received Time(sec)	60.23
Lowest SMS Sent/Received Time(sec)	2.12

SMS Sent/Recieved Success vs Failed Tests



SMS Test Summary	
Number of Operators Detected	1
Operator Names	Ee
Total SMS Sent/Received Time Attempt	120
Average SMS Sent/Received Time(sec)	39.23
Total SMS Sent Success Count	15
Total SMS Sent Failed Count	105
Total SMS Recieved Success Count	15

SMSTest:

Total number of Sent/Received Success Count: 15

Total number of Sent/Received Failed Count: 105

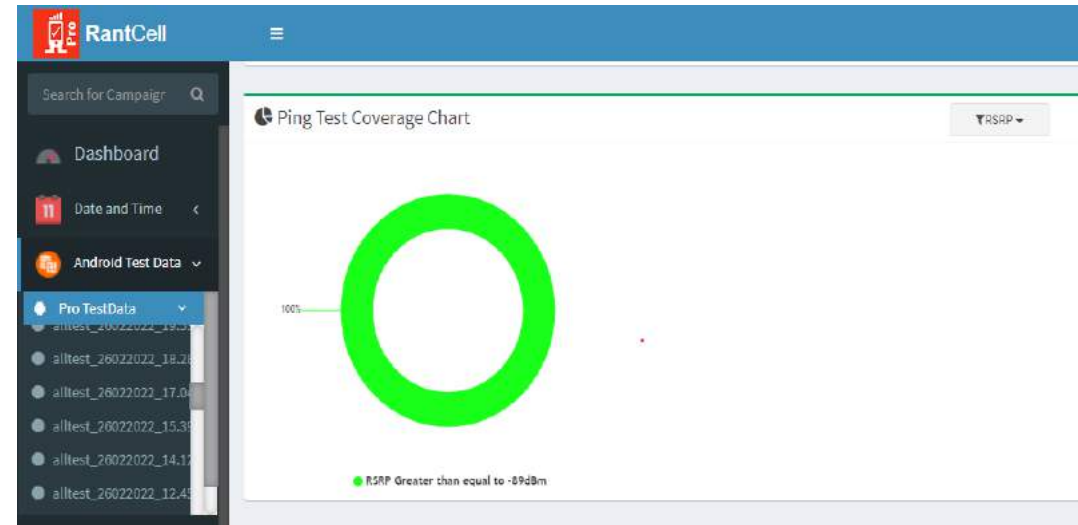


4G Radio conditions during tests between Feb 28, 2022, 12:00am to Mar 01, 2022 , 23:59 UK Time

Ping test

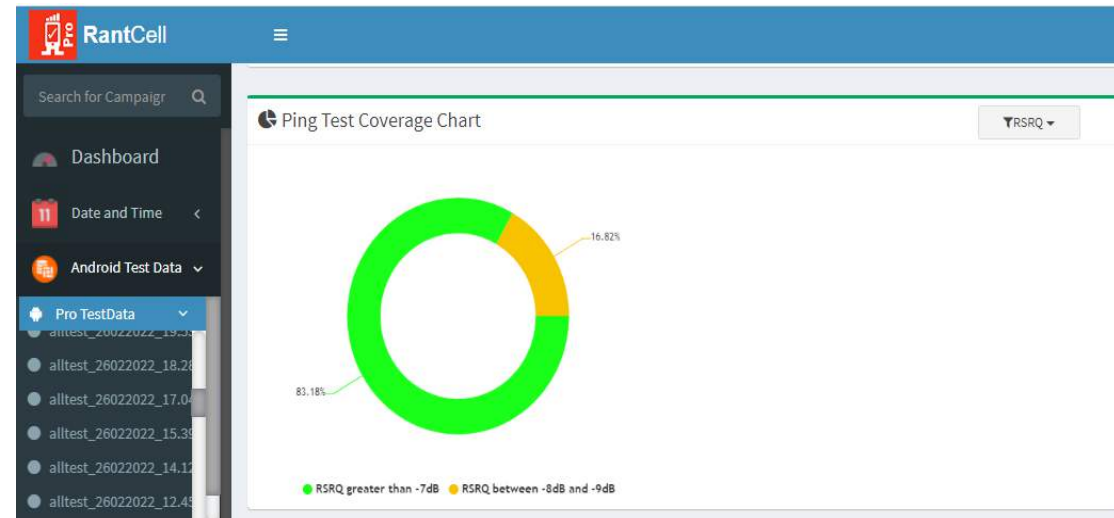
- RSRP Range :
 - RSRP Greater than equal to -89dBm(100%)

RSRP



- RSRQ Range :
 - RSRQ greater than -7dBm (83.18%)
 - RSRQ Between -8dBm to -9dBm (16.82%)

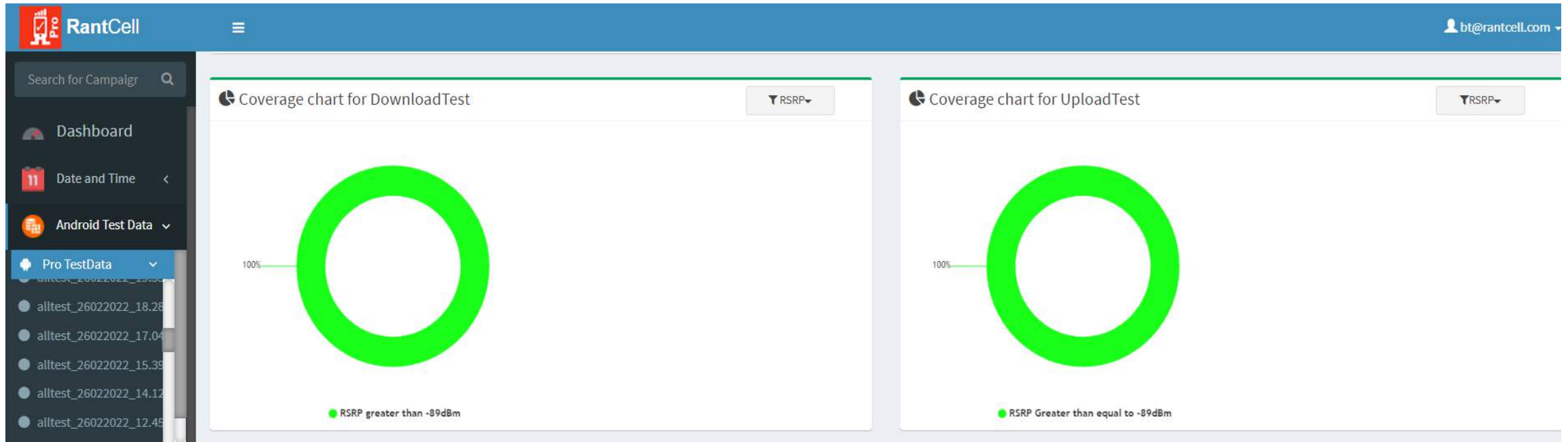
RSRQ



4G Radio conditions during tests between Feb 28, 2022 12:00am to Mar 01, 2022, 23:59pm UK Time

Download and Upload Test

RSRP



- RSRP Range : Download

- RSRP greater than -89dBm (100%)

- RSRP Range : Upload

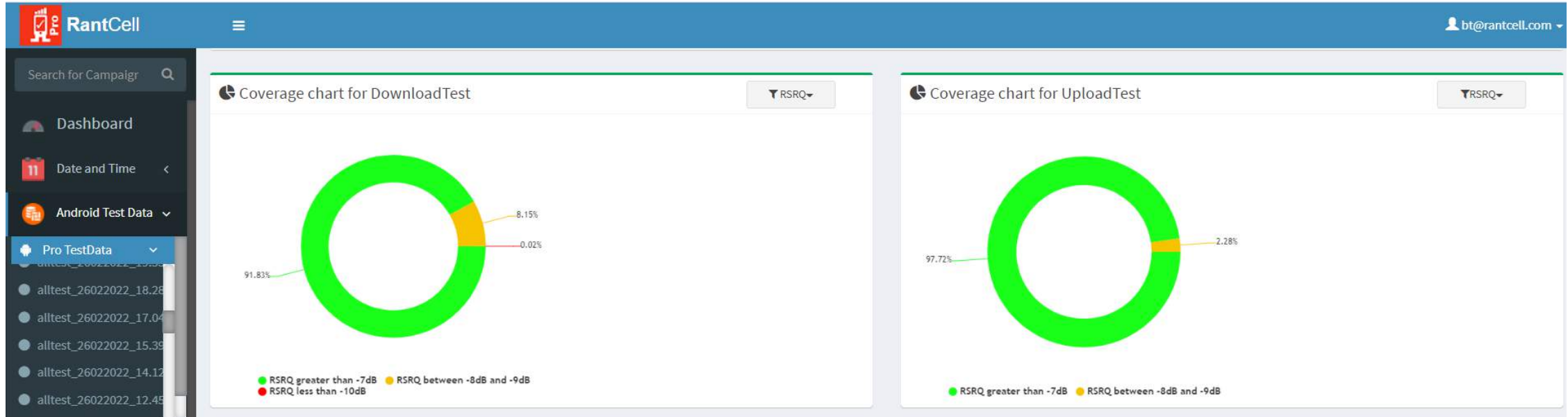
- RSRP greater than equal to -89dBm (100%)



4G Radio conditions during tests between Feb 28, 2022 12.00am to Mar 01, 2022, 23:59pm UK Time

Download and Upload Test

RSRQ



- RSRQ Range : Download

- RSRQ Between -8dbm to -9dBm (8.15%)
- RSRQ greater than -7dBm (91.83%)
- RSRQ less than -10dBm (0.02%)

- RSRQ Range : Upload

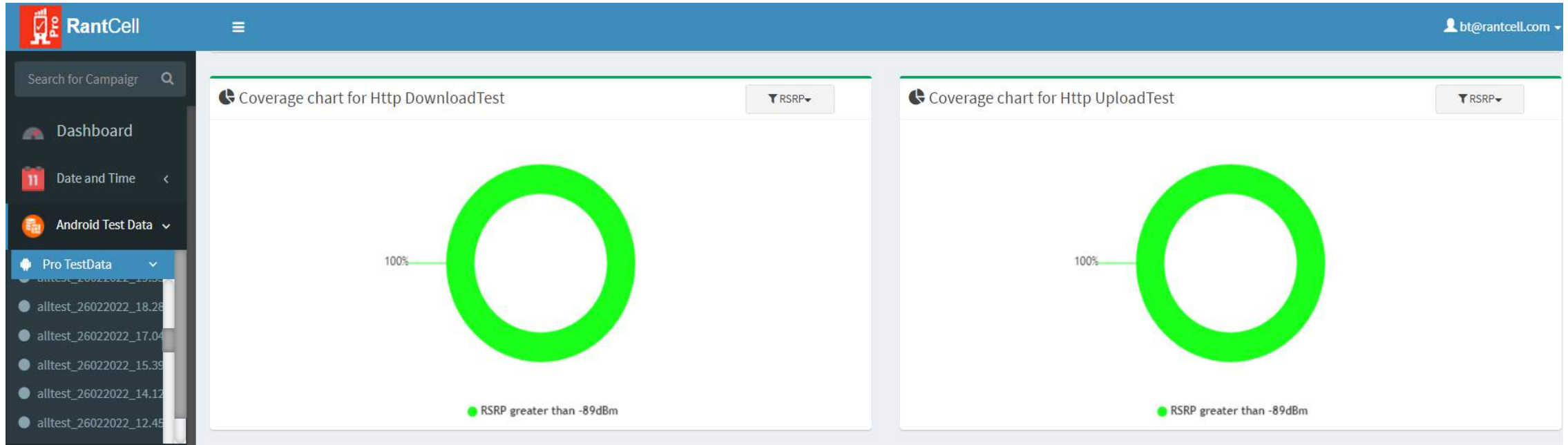
- RSRQ Between -8dbm to -9dBm (2.28%)
- RSRQ greater than -7dBm (97.72%)



4G Radio conditions during tests between Feb 28, 2022 12:00am to Mar 01, 2022, 23:59pm UK Time

HTTP Download and Upload Test

RSRP



- RSRP Range : HTTP Download
 - RSRP greater than -89dbm(100 %)

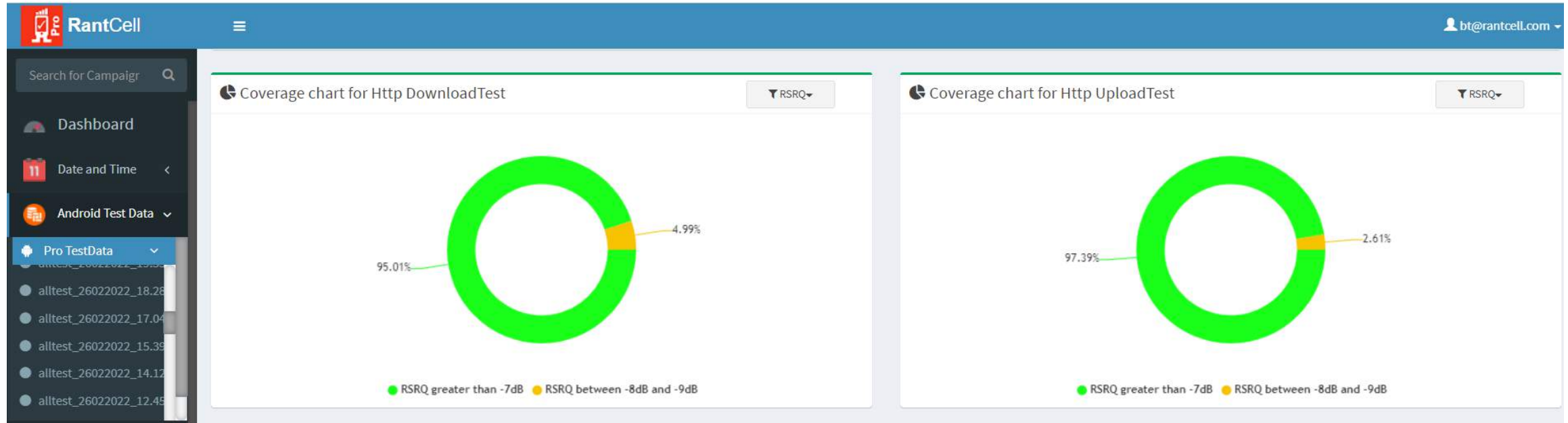
- RSRP Range : HTTP Upload
 - RSRP greater than -89dBm (100 %)



4G Radio conditions during tests between Feb 28, 2022 12:00am to Mar 01, 2022, 23:59pm UK Time

HTTP Download and Upload Test

RSRQ



- RSRQ Range : Download

- RSRQ Between -8dbm to -9dBm (4.99%)
- RSRQ greater than -7dBm (95.01%)

- RSRQ Range : Upload

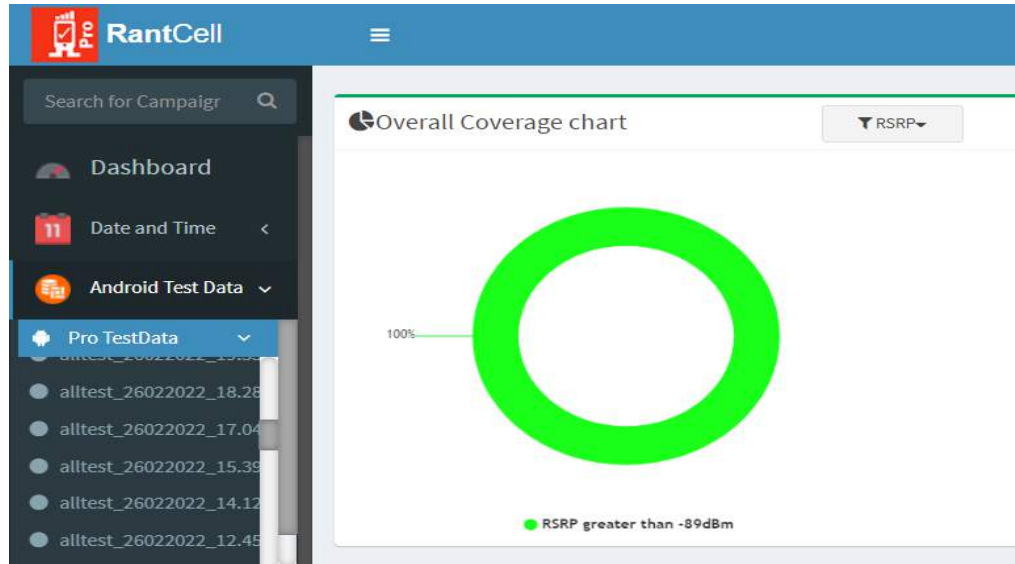
- RSRQ Between -8dbm to -9dBm (2.61%)
- RSRQ greater than -7dBm (97.39%)



4G Radio conditions during tests between Feb 28, 2022 12:00am to Mar 01, 2022, 23:59pm UK Time

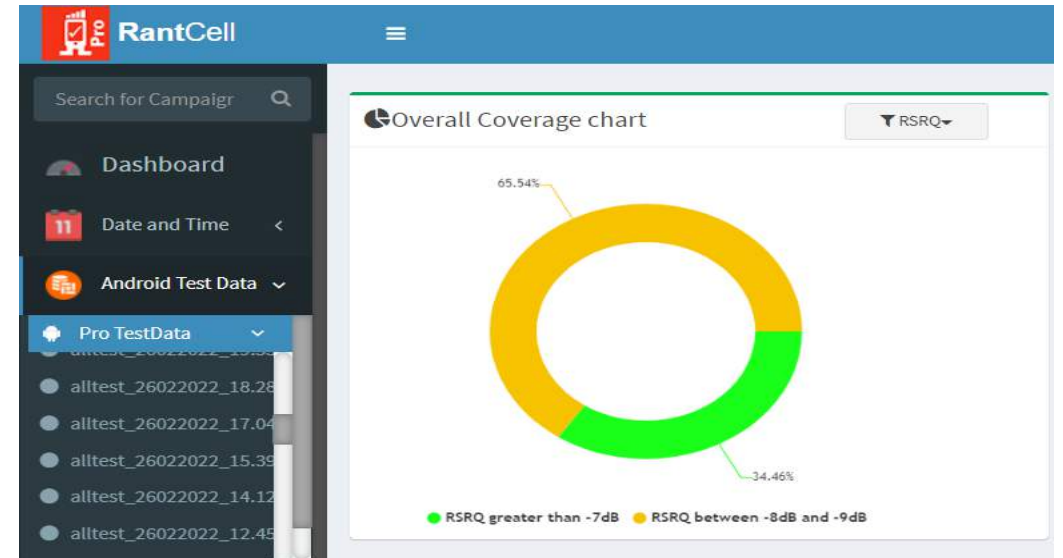
Stream Test

RSRP



- RSRQ Range :
 - RSRQ greater than -89dBm (100%)

RSRQ



- RSRQ Range :
 - RSRQ Between -8dbm to -9dBm (65.54%)
 - RSRQ greater than -7dBm (34.46%)



4G Radio conditions during tests between Feb 28, 2022 12:00am to Mar 01, 2022, 23:59pm UK Time

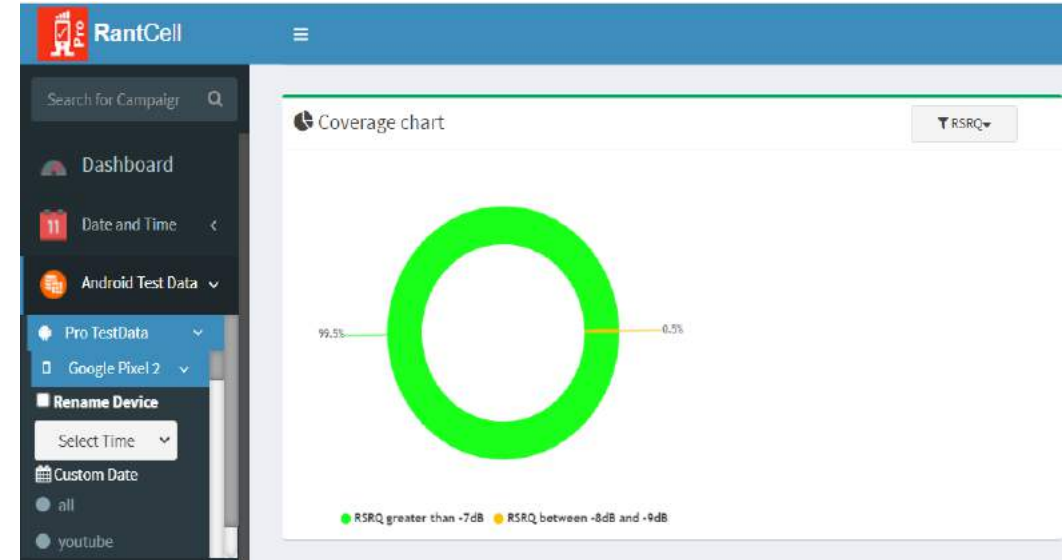
Call Test

RSRP



- RSRQ Range :
 - RSRQ greater than equal to -89dBm (100%)

RSRQ



- RSRQ Range :
 - RSRQ greater than -7dBm (99.5 %)
 - RSRQ between -8dBm and -9dBm (0.5 %)



4G Radio conditions during tests between Feb 28, 2022 12:00am to Mar 01, 2022, 23:59pm UK Time

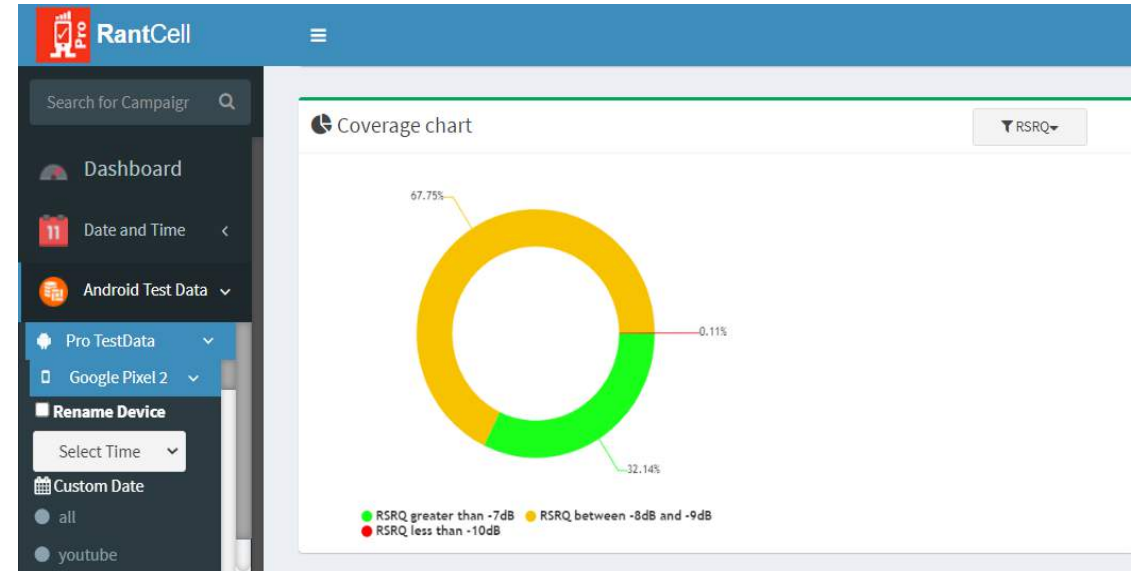
SMS Test

RSRP



- RSRQ Range :
 - RSRQ Greater than equal to -89dBm (100%)

RSRQ



- RSRQ Range :
 - RSRQ Between -8dbm to -9dBm (67.75 %)
 - RSRQ greater than -7dBm (32.14%)
 - RSRQ less than -10dBm (0.11%)



4G Base Station Test Summary

1. In some cases, we have noticed high latency on network in lab conditions, this needs to be investigated.
2. Voice call setup failures noticed on 28th Feb and Mar 1st. In total 20 failures noticed out of 196 voice call tests. Lab conditions it should be 100% success rate.
3. YouTube tests had in total of 16 tests had good user experience rating and with 2 poor experience mainly because user had long waited time for video to load. No buffering was noticed while playing video.

	No. of Tests	Average Value	Highest value	Lowest value	No. of failed Test
Ping test	476	56.83	3260	20	3
FTP download	476	5.01	8.80	3.63	2
FTP upload	476	3.64	8.99	2.17	2
HTTP download	426	4.76	8.53	3.75	4
HTTP upload	426	3.51	13.77	1.52	8



4G Base Station Test Summary

	No of Tests	Good Rating	Fair Rating	Poor Rating	No of Failed
Stream Test	16	11	3	2	0
	No of Tests	Call Success	Highest Call setup	Lowest Call setup	No of Failed
Call Test	196	176	2.97	1.86	20
	No of Tests	Sent/Received Success	Sent/Received Failed		
SMS Test	120	15	150		