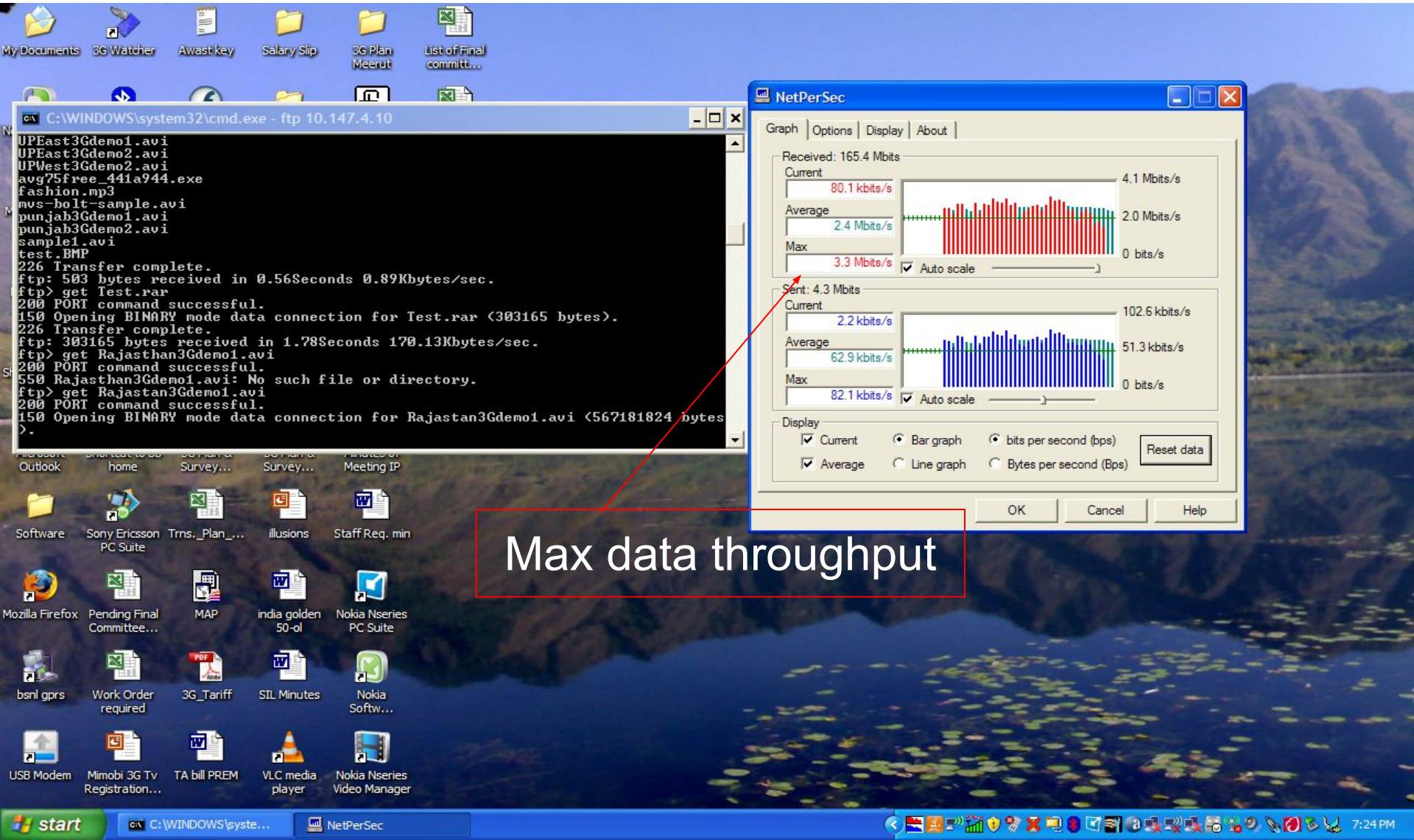
DATA Speed Check through NetPerSec Tool

NetperSec Tool can be downloaded free-of-cost from Internet.



List of HSPA Parameters - NodeB

Following are the main parameter for Node-B which effect the data throughput in HS

Node-B Parameters	Suggested Values
hsdpaCapability	HSDPA_CAPABLE (Set through script)
maxNumHsPdschCodes	15 (Licensed based)
queueSelectAlgorithm	1 (default 0)
hsPowerMargin	**2** (default 2)
cqiAdjustmentOn	On (default false)
maxHsRate	44 (For 3 E1's)
steeredHsAllocation	False (Licensed based)
supportOf16qam	true (Licensed based)
flexibleSchedulerOn	On (Licensed based)
maxedchrate	51000(valid for WRAN P5.0)

hsdpaCapability

This parameter is use to set the HSDPA capability of cell.

Possible values:
- HSDPA_CAPABLE -------- Support HSDPA
- HSDPA_NON_CAPABLE -------- HSDPA Not supported.

```
Struct eulOptimalNoiseFloorLock has 2 members:
 >>> 1.eulNoiseFloorLock = false
 >>> 2.eulOptimalNoiseFloorEstimate = -1040
eulSlidingWindowTime                1800
eulThermalLevelPrior                -1040
hsCodeResourceId                    0
hsdpaCapability                     1 (HSDPA_CAPABLE)
localCellId                         2
maxDlPowerCapability                430
maxEAgchPowerDl                     -183
maxNumHsPdschCodes                  5
maxNumHsdpaUsers                    16
```

maxNumHsPdschCodes

The maximum number of HS-PDSCH codes is dependent on license level and parameter maxNumHsPdschCodes; up to 15 codes may be allocated.

For BSNL it is 5 codes.

maxNumHsPdschCodes	Max. Speed(Mbps)
5	3.6
10	7.2
15	14.4

```
localCellId                         1
maxDlPowerCapability                430
maxEAgchPowerDl                     -183
maxNumHsPdschCodes                  5
maxNumHsdpaUsers                    16
maxUserEHichERgchPowerDl            -183
minDlPowerCapability                190
minSpreadingFactor                  4
```

hsPowerMargin

$$P_{HS} = P_{max} - P_{non\text{-}HS} - \text{hsPowerMargin [dB]},$$

- P_{HS}: the power available for the HS
- P_{max}: the maximum downlink transmission power for the cell signaled from the RNC.
- $P_{non\text{-}HS}$: total transmitted carrier power of all codes not used for HS
- hsPowerMargin: HS Power Margin

It is possible to use the entire remaining carrier power for the HS-PDSCH and HS-SCCH, but if a more conservative power allocation is desired, this can be configured with the parameter hsPowerMargin, which acts as a back off from the maximum downlink transmission power of the cell.

It is relative to the maximum available power of the cell.

Value Range = 0 to 200

New value =2 (earlier it was set to 0)

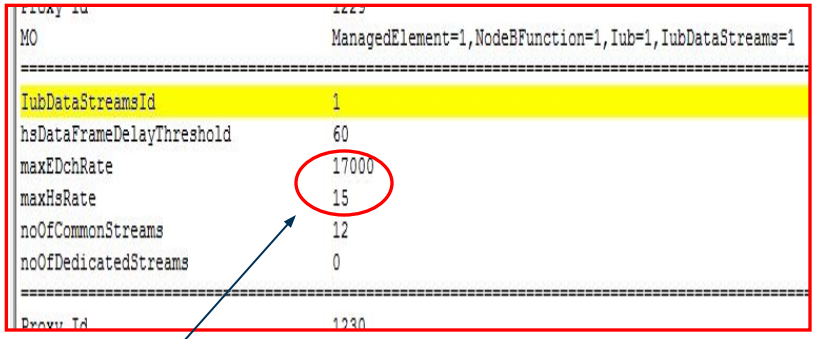
Value 2= 2*.1=.2dB

```
dbccDeviceRef[1]
 >>> dbccDeviceRef = ManagedElement=1,Equipment=1,S
dpclDeviceRef                          ManagedElement
frequencyPlane                         1
hsPowerMargin                          2
hsScchMaxCodePower                     -20
hsScchMinCodePower                     -150
operationalState                       1 (ENABLED)
```

maxHsRate

maxHsRate is the maximum HSDPA bit rate possible over Iub i.e it determines the max possible HSDPA bit rate of HS flow over the Transport N/w. The value of maxHsRate is related to the capacity of the AAL2 paths allocated to AAL2 connection of Class C in one Node B. it is defined per Iub interface. Default value is 15 that will support 1.5Mbps.
In BSNL channelization code is 5, i.e. we can get maximum speed of 3.6 Mbps.For achieving this speed we need to tune the value of maxHsRate. We change it to 44 means it can support speed up to 4.4 Mbps.

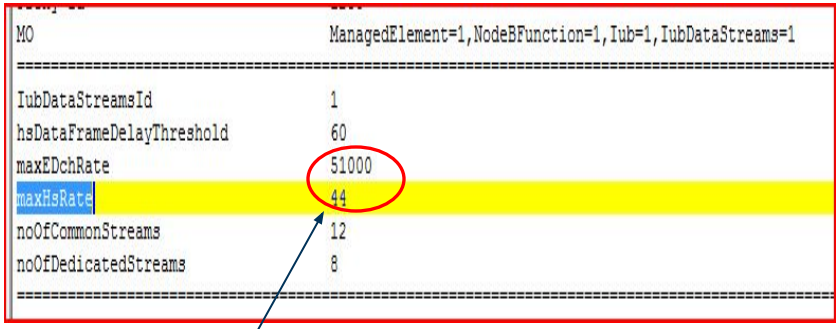
Old Value



MO	ManagedElement=1,NodeBFunction=1,Iub=1,IubDataStreams=1
IubDataStreamsId	1
hsDataFrameDelayThreshold	60
maxEDchRate	17000
maxHsRate	15
noOfCommonStreams	12
noOfDedicatedStreams	0

maxHSRate=15
Max. speed~ 1.5 Mbps

New Value



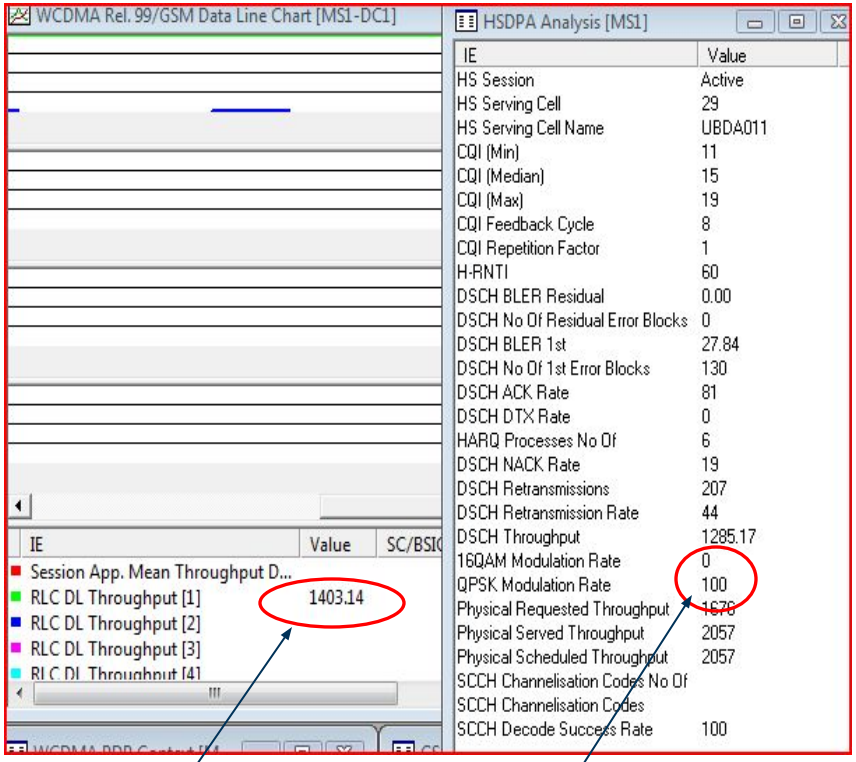
MO	ManagedElement=1,NodeBFunction=1,Iub=1,IubDataStreams=1
IubDataStreamsId	1
hsDataFrameDelayThreshold	60
maxEDchRate	51000
maxHsRate	44
noOfCommonStreams	12
noOfDedicatedStreams	8

maxHSRate=44
Max. speed~ 3.5 Mbps

supportOf16qam

Symbol rate for QPSK and 16QAM are 2bits and 4bits respectively ie we can achieve higher rate with 16QUAM with the same resource and good radio condition. The available modulation type impacts the maximum achievable bit rate in the cell.

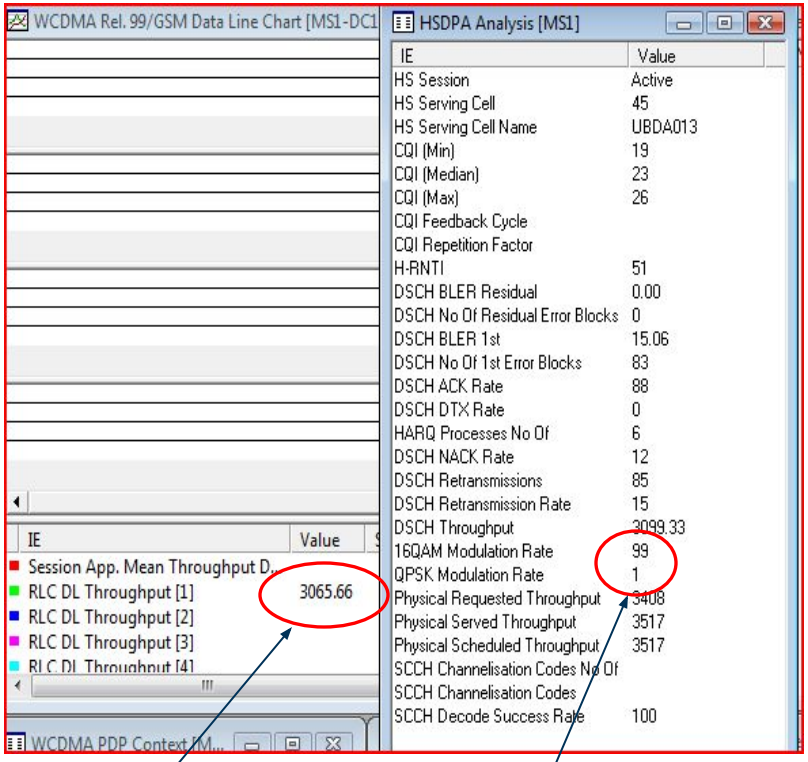
supportOf16qam=False



RLC Throughput

Modulation consist of 100% QPSK and 0% 16QAM

supportOf16qam=True



RLC Throughput

Modulation consist of both QPSK and 16QAM