

ENM Network Health Monitor KPI

Recommendations

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1 ENM Network Health Monitor KPI Recommendations

Network Health Monitor (NHM) supports many Key Performance Indicators (KPIs) predefined for Ericsson nodes. This document lists references to the relevant node CPI resources, which describe the KPIs in more detail.

This document also correlates KPI names where the KPI name from the node CPI changes based on node version, as NHM uses one name for a specific KPI.

These KPIs are managed by the NHM KPI Management web-based user interface and are available for monitoring using the NHM monitoring web-based User Interfaces:

- Network Health Monitor
- Network Health Analysis
- Node Monitor

Target Groups

The intended target group for this document is:

- Alarm Operator
- Radio Network Engineer
- System Administrator
- Installation Engineer
- Field Technician
- Business Manager
- Switching Engineer



2 ENM Network Health Monitor KPI Calculations

NHM KPI formulas employ best-effort calculation to support different releases of the same node type.

Best-effort calculation is used because new releases of node types can introduce new counters. NHM updates KPI formulas to support the new counters and include them in KPI calculations.

Node Types Releases and Counters

If a new node type introduces a counter that contributes to an existing NHM KPI formula, the formula is updated to include the counter.

The same updated NHM KPI formula is also used with the previous releases of this node type, which do not contain this new counter. The KPI formula, however, ignores the new counter when performing calculations with node types releases that do not contain the new counter.

Note: If the default handling described in the following examples is not desired for a KPI scenario, then a new user-defined KPI is created.

Previous Node Type (Node Release 1)

$$\text{KPI1} = (A + B) / (C + D)$$

Here, A, B, C, D are counter names.

If both counters A and B have null values, the result of KPI1 is presented as N/A.

If both counters C and D have null values, the result of KPI1 is presented as N/A.

New Node Type (Node Release 2)

This release of the node introduces a new counter E that contributes to KPI1 for Node Release 2.

KPI1 is updated to include the new counter E.

$$\text{KPI1} = (A + B + E) / (C + D)$$

Updated NHM KPI

For Node Release 1, the counter E is unavailable and KPI1 is evaluated as $(A + B) / (C + D)$.



Note: Counter E is ignored and is not included in the KPI calculations.

For Node Release 2, the counter E is available and KPI1 is evaluated as $(A + B + E) / (C + D)$.

If counters A, B and E all have null values, the result of KPI1 is presented as N/A.

If both counters C and D have null values, the result of KPI1 is presented as N/A.



3 Predefined KPIs

Ericsson predefined KPIs supported by NHM listed in this section have different names based on the version of the node. It also states, which versions of CPI to refer to for more information on these KPIs and their formulas.

NHM supports simple aggregation in KPIs, to calculate a KPI result across all instances of a Measurement Object. NHM supports single instance, vector and, array counters.

Categorization

The Node KPIs are categorized as follows:

- Accessibility
- Retainability
- Integrity
- Mobility
- Availability
- Call Completion Success Rate

NHM does not use this categorization, but it is included here for information and to align with the Node CPI.

3.1 ENM KPI References

There are a number of ENM predefined KPIs available in KPI Management.

For further details, refer to section *Setup and Initiate Autonomic Incident Management* in the *ENM Monitoring System Administrator Guide (1/1543-AOM 901 151-2 Uen)*.



3.2 Node KPI References

Learn the relevant KPI to refer to for a particular Ericsson Node release.

Document No.	Document Title	NHM Supported Node Types	Node Release
36/006 51-AXB 250 17	GSM KPIs	SGSN-MME, vSGSN-MME	All ENM Supported Versions
38/006 51-AXB 250 17	LTE KPIs	SGSN-MME, vSGSN-MME	All ENM Supported Versions
37/006 51-AXB 250 17	WCDMA KPIs	SGSN-MME, vSGSN-MME	All ENM Supported Versions
37/1553-HSC 105 50/1 Uen BH	Key Performance Indicators	eNodeB Baseband Radio Node	L18.Q1
		eNodeB DU Radio Node	L18.Q1
		eNodeB Pico Radio Node	L18A
37/1553-HSC 105 50/1 Uen BE	Key Performance Indicators	eNodeB Baseband Radio Node	L17.Q4
		eNodeB DU Radio Node	L17.Q4
37/1553-HSC 105 50/1 Uen AZ	Key Performance Indicators	eNodeB Baseband Radio Node	L17.Q3, L17.Q2
		eNodeB DU Radio Node	L17.Q3, L17.Q2
37/1553-HSC 105 50/1 Uen AV	Key Performance Indicators	eNodeB Baseband Radio Node	L17.Q1
		eNodeB DU Radio Node	L17.Q1
37/1553-HSC 105 50/1 Uen BA	Key Performance Indicators	eNodeB Baseband Radio Node	L17B
		eNodeB DU Radio Node	L17B
		eNodeB Pico Radio Node	L17B
37/1553-HSC 105 50/1 Uen AN	Key Performance Indicators	eNodeB Baseband Radio Node	L17A
		eNodeB DU Radio Node	L17A
37/1553-HSC 105 50/1 Uen AL	Key Performance Indicators	eNodeB Baseband Radio Node	L16B
37/1553-HSC 105 50/1 Rev AK	Key Performance Indicators	eNodeB DU Radio Node	L16B
37/1553-HSC 105 50/1 Uen AH3	Key Performance Indicators	eNodeB Pico Radio Node	L16A
37/1553-HSC 105 50/1 Uen AG	Key Performance Indicators	eNodeB Baseband Radio Node	L16A
37/1553-HSC 105 50/1 Rev AH	Key Performance Indicators	eNodeB DU Radio Node	L16A
37/1553-HSC 105 50/1-V1 Uen AE	Key Performance Indicators	eNodeB Pico Radio Node	L15B
37/1553-HSC 105 50/1 Rev AF	Key Performance Indicators	eNodeB DU Radio Node	L15B
37/1553-HSC 105 50/1-V2 Rev AC	Key Performance Indicators	eNodeB DU Radio Node	L14B TDD
37/1553-HSC 105 50/1-V1 Rev AC	Key Performance Indicators	eNodeB DU Radio Node	L14B FDD
37/1553-HSC 105 50/1-V1 Rev CK	Key Performance Indicators	RadioNode	18.Q4
47/1553-HSC 105 50/1-V1 Rev AS	Key Performance Indicators	RadioNode	18.Q4
120/1553-HSD 101 02 Uen AM	Radio Network KPI	NodeB Baseband Radio Node	W18.Q1, W17.Q4
		NodeB DU Radio Node	W18.Q1, W17.Q4
		RNC	W18.Q1, W17.Q4
		NodeB Pico Radio Node	W18A
120/1553-HSD 101 02 Uen AK	Radio Network KPI	NodeB Baseband Radio Node	W17.Q3



Document No.	Document Title	NHM Supported Node Types	Node Release
120/1553-HSD 101 02 Uen AH1	Radio Network KPI	NodeB DU Radio Node	W17.Q3
		RNC	W17.Q3
		NodeB Baseband Radio Node	W17.Q2
		NodeB DU Radio Node	W17B
		RNC	W17B
120/1553-HSD 101 02 Uen AG	Radio Network KPI	NodeB Baseband Radio Node	W17.Q1, W17A
		NodeB Baseband Radio Node	W17A
		NodeB DU Radio Node	W17A
		RNC	W17A
120/1553-HSD 101 02 Uen AF1	Radio Network KPI	NodeB Baseband Radio Node	W16B
		NodeB DU Radio Node	W16B
		RNC	W16B
120/1553-HSD 101 02 Uen AE	Radio Network KPI	NodeB Baseband Radio Node	W16A
		NodeB DU Radio Node	W16A
		RNC	W16A
		NodeB Pico Radio Node	W16A
120/1553-HSD 101 02 Uen AD	Radio Network KPI	NodeB Baseband Radio Node	W15B
		NodeB DU Radio Node	W15B
		RNC	W15B
120/1553-HSD 101 02 Uen V1	Radio Network KPI	NodeB DU Radio Node	W13B
4/1551-AOM 901 151 Uen AD	ENM Transport KPI Definitions	Fronthaul 6020	All ENM Supported Versions
		Fronthaul 6080	
		Fronthaul 6392	
		Router6x71	
		Router6274	
		Router6672	
		Router6675	
		eNodeB Baseband Radio Node	
		eNodeB DU Radio Node	
		eNodeB Pico Radio Node	
		NodeB Baseband Radio Node	
		NodeB DU Radio Node	
		RNC	
		NodeB Pico Radio Node	
		SGSN-MME	
		5GRadioNode	
		ESC, SCU	R17C
JUNIPER-MX, JUNIPER-PTX, JUNIPER-SRX, JUNIPER-vMX, JUNIPER-vSRX	18.2R1, 18.3R1		
MINI-LINK 6351, MINI-LINK 6352, MINI-LINK PT 2020, Switch 6391	All ENM supported Versions		
4/1551-AOM901151 Uen N	ENM Transport KPI Definitions	MINI-LINK LH	All ENM supported versions
		MINI-LINK TN	



Document No.	Document Title	NHM Supported Node Types	Node Release
		MINI-LINK CN210	
		MINI-LINK CN510R1	
		MINI-LINK CN510R2	
		MINI-LINK CN810R1	
		MINI-LINK CN810R2	
		MINI-LINK 665x	
		MINI-LINK 669x	
		MINI-LINK 6366	
10056-CNA 403 3066	Key Performance Indicators and Formula Definitions for Autonomic Incident Management	gNodeB Baseband Radio Node	All ENM Supported Versions

3.3 Predefined KPIs Supported by NHM

Learn the KPI names in the Node KPI CPI documents and the corresponding KPI names in the KPI Management web-based user interface.

In some instances, the KPI name in the Node KPI CPI documents changed in later releases of the node. For example, the Downlink Latency KPI is renamed Average DL UE Latency in L16B. This KPI is represented as Downlink Latency in the KPI Management web-based user interface.

Where there is a difference in KPI naming, the [#uzf1491227528698/table_N1004E_N10032_N10001](#) shows the names of the KPIs in the Node KPI CPI documents (for each supported release) and the corresponding KPI names used in the KPI Management web-based user interface.

Node KPI Category	Node KPI Name	NHM Supported Node Types	Node Release	Name in KPI Management
Accessibility	Attach Failure Ratio	SGSN-MME, vSGSN-MME	All ENM Supported Versions	Attach Failure Ratio LTE
	Attach Failure Ratio	SGSN-MME, vSGSN-MME	All ENM Supported Versions	Attach Failure Ratio GSM
	Attach Failure Ratio	SGSN-MME, vSGSN-MME	All ENM Supported Versions	Attach Failure Ratio WCDMA
	SDH/SONET Port Availability	JUNIPER-MX	18.2R1,18.3R1	SDH SONET Port Availability
	Radio Link Termination Availability	MINI-LINK PT 2020, MINI-LINK 6351, MINI-LINK 6352, Fronthaul 6392	All ENM Supported Versions	Radio Link Availability 15m
	Radio Link Termination Availability	MINI-LINK PT 2020, MINI-LINK 6351, MINI-LINK 6352, Fronthaul 6392	All ENM Supported Versions	Radio Link Availability 24h
Integrity	Downlink Latency	eNodeB DU Radio Node	L14B, L15B, L16A	Downlink Latency



Node KPI Category	Node KPI Name	NHM Supported Node Types	Node Release	Name in KPI Management	
		eNodeB Baseband Radio Node	L16A		
		eNodeB PICO Radio Node	L15B, L16A		
	Average DL UE Latency	eNodeB DU Radio Node	L16B, L17A, L17B		
		eNodeB Baseband Radio Node	L16B, L17A, L17B		
	Average UE PDCP DL Throughput	eNodeB DU Radio Node	L14B, L15B		Average UE PDCP DL Throughput
		eNodeB PICO Radio Node	L15B		
	Average DL PDCP UE Throughput	eNodeB DU Radio Node	L16A, L16B, L17A, L17B		
		eNodeB Baseband Radio Node	L16A, L16B, L17A, L17B		
		eNodeB PICO Radio Node	L16A, L17B		
	Average PDCP Cell DL Throughput	eNodeB DU Radio Node	L14B, L15B		Average PDCP Cell DL Throughput
		eNodeB PICO Radio Node	L15B		
	Average DL PDCP Cell Throughput	eNodeB DU Radio Node	L16A, L16B, L17A, L17B		
		eNodeB Baseband Radio Node	L16A, L16B, L17A, L17B		
		eNodeB PICO Radio Node	L16A, L17B		
	Average MAC Cell DL Throughput	eNodeB DU Radio Node	L14B, L15B		Average MAC Cell DL Throughput
		eNodeB PICO Radio Node	L15B		
	Average DL MAC Cell Throughput	eNodeB DU Radio Node	L16A, L16B, L17A, L17B		
		eNodeB Baseband Radio Node	L16A, L16B, L17A, L17B		
eNodeB PICO Radio Node		L16A, L17B			
Average UE UL PDCP Throughput	eNodeB DU Radio Node	L14B, L15B	Average UE UL PDCP Throughput		
	eNodeB PICO Radio Node	L15B			
Average UL PDCP UE Throughput	eNodeB DU Radio Node	L16A, L16B, L17A			
	eNodeB Baseband Radio Node	L16A, L16B, L17A			
	eNodeB PICO Radio Node	L16A			
Average Cell UL PDCP Throughput	eNodeB DU Radio Node	L14B, L15B	Average Cell UL PDCP Throughput		
	eNodeB PICO Radio Node	L15B			
Average UL PDCP Cell Throughput	eNodeB DU Radio Node	L16A, L16B, L17A, L17B			
	eNodeB Baseband Radio Node	L16A, L16B, L17A, L17B			



Node KPI Category	Node KPI Name	NHM Supported Node Types	Node Release	Name in KPI Management
		eNodeB PICO Radio Node	L16A, L17B	
	Average Cell UL MAC Throughput	eNodeB DU Radio Node	L14B, L15B	Average Cell UL MAC Throughput
	Average UL MAC Cell Throughput	eNodeB DU Radio Node	L16A, L16B, L17A, L17B	
		eNodeB Baseband Radio Node	L16A, L16B, L17A, L17B	
	Uplink Packet Loss Rate	eNodeB DU Radio Node	L14B, L15B, L16A	Uplink Packet Loss Rate
		eNodeB Baseband Radio Node	L16A	
		eNodeB PICO Radio Node	L15B, L16A	
	Average UL Packet Loss Rate	eNodeB DU Radio Node	L16B, L17A, 17B	
		eNodeB Baseband Radio Node	L16B, L17A, 17B	
	Average UE PDCP DRB DL Latency per QCI	eNodeB DU Radio Node	L16A	Average DL UE PDCP DRB Latency per QCI
		eNodeB Baseband Radio Node	L16A	
		eNodeB PICO Radio Node	L16A	
	Average DL UE PDCP DRB Latency per QCI	eNodeB DU Radio Node	L16B, L17A, L17B	
		eNodeB Baseband Radio Node	L16B, L17A, L17B	
		eNodeB PICO Radio Node	L16B, L17A, L17B	
	Average MAC DRB Latency per QCI	eNodeB DU Radio Node	L16A	Average DL MAC DRB Latency per QCI
		eNodeB Baseband Radio Node	L16A	
	Average DL MAC DRB Latency per QCI	eNodeB DU Radio Node	L16B, L17A, L17B	
		eNodeB Baseband Radio Node	L16B, L17A, L17B	
	Average UE DL PDCP Throughput per QCI	eNodeB DU Radio Node	L14B, L15B, L16A	Average DL PDCP UE DRB Throughput per QCI
		eNodeB Baseband Radio Node	L14B, L15B, L16A	
		eNodeB PICO Radio Node	L15B, L16A	
	Average DL PDCP UE DRB Throughput per QCI	eNodeB DU Radio Node	L16B, L17A, L17B	
		eNodeB Baseband Radio Node	L16B, L17A, L17B	
		eNodeB PICO Radio Node	L16B, L17A, L17B	
	Average UE UL Packet Loss Rate per QCI	eNodeB DU Radio Node	L14B, L15B, L16A	UL Packet Loss Rate per QCI
		eNodeB Baseband Radio Node	L14B, L15B, L16A	
		eNodeB PICO Radio Node	L15B, L16A	



Node KPI Category	Node KPI Name	NHM Supported Node Types	Node Release	Name in KPI Management
	Average UL Packet Loss Rate per QCI	eNodeB DU Radio Node	L16B, L17A, L17B	
		eNodeB Baseband Radio Node	L16B, L17A, L17B	
		eNodeB PICO Radio Node	L16B, L17A, L17B	
	Average UE UL Throughput per LCG	eNodeB DU Radio Node	L14B, L15B, L16A	Average UL UE Throughput per LCG
		eNodeB Baseband Radio Node	L14B, L15B, L16A	
		eNodeB PICO Radio Node	L15B, L16A	
	Average UL UE Throughput per LCG	eNodeB DU Radio Node	L16B, L17A, L17B	
		eNodeB Baseband Radio Node	L16B, L17A, L17B	
		eNodeB PICO Radio Node	L16B, L17A, L17B	
SDH/SONET Port Errored Seconds Ratio	JUNIPER-MX	18.2R1,18.3R1	SDH SONET Port Errored Seconds Ratio	
SDH/SONET Port Severely Errored Seconds Ratio	JUNIPER-MX	18.2R1,18.3R1	SDH SONET Port Severely Errored Seconds Ratio	
Radio Link Termination Severely Errored Seconds Ratio	MINI-LINK PT 2020, MINI-LINK 6351, MINI-LINK 6352, Fronthaul 6392	All ENM Supported Versions	Radio Link Quality Severely Errored Seconds Ratio	
	MINI-LINK LH MINI-LINK TN MINI-LINK CN210 MINI-LINK CN510R1 MINI-LINK CN510R2 MINI-LINK CN810R1 MINI-LINK CN810R2 MINI-LINK 665x MINI-LINK 669x MINI-LINK 6366	11B, M15A, M16A, M17A, M17B, M17.Q4 (MINI-LINK TN, MINI-LINK LH) M12A (MINI-LINK CN210) M12A (MINI-LINK CN510R1) M16A (MINI-LINK CN510R2) M13B (MINI-LINK CN810R1) M16A (MINI-LINK CN810R2) M18.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q2 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q4 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M19.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M19.Q2 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366)		



Node KPI Category	Node KPI Name	NHM Supported Node Types	Node Release	Name in KPI Management	
		MINI-LINK PT 2020	M17B, 17.Q4		
		MINI-LINK 6351	M17B, 17.Q4		
		MINI-LINK 6351	M17A, M17B, 17.Q4		
		Fronthaul 6392	M17.Q4		
	Radio Link Termination Errored Seconds Ratio		MINI-LINK PT 2020, MINI-LINK 6351, MINI-LINK 6352, Fronthaul 6392	All ENM Supported Versions	Radio Link Quality Errored Seconds Ratio
			MINI-LINK LH MINI-LINK TN MINI-LINK CN210 MINI-LINK CN510R1 MINI-LINK CN510R2 MINI-LINK CN810R1 MINI-LINK CN810R2 MINI-LINK 665x MINI-LINK 669x MINI-LINK 6366	11B, M15A, M16A, M17A, M17B, M17.Q4 (MINI-LINK TN, MINI-LINK LH) M12A (MINI-LINK CN210) M12A (MINI-LINK CN510R1) M16A (MINI-LINK CN510R2) M13B (MINI-LINK CN810R1) M16A (MINI-LINK CN810R2) M18.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q2 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q4 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M19.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M19.Q2 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366)	
			MINI-LINK PT 2020	M17B, 17.Q4	
			MINI-LINK 6351	M17B, 17.Q4	
			MINI-LINK 6351	M17A, M17B, 17.Q4	
	Fronthaul 6392	M17.Q4			
Radio Link Termination Input Max Power		MINI-LINK LH MINI-LINK TN MINI-LINK CN210 MINI-LINK CN510R1 MINI-LINK CN510R2 MINI-LINK CN810R1 MINI-LINK CN810R2 MINI-LINK 665x MINI-LINK 669x MINI-LINK 6366	11B, M15A, M16A, M17A, M17B, M17.Q4 (MINI-LINK TN, MINI-LINK LH) M12A (MINI-LINK CN210) M12A (MINI-LINK CN510R1) M16A (MINI-LINK CN510R2) M13B (MINI-LINK CN810R1) M16A (MINI-LINK CN810R2)	Radio Link Input Max Power	



Node KPI Category	Node KPI Name	NHM Supported Node Types	Node Release	Name in KPI Management	
			M18.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q2 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q4 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M19.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366)		
		MINI-LINK PT 2020	M17B, 17.Q4		
		MINI-LINK 6351	M17B, 17.Q4		
		MINI-LINK 6351	M17A, M17B, 17.Q4		
		Fronthaul 6392	M17.Q4		
	Radio Link Termination Input Min Power	MINI-LINK LH MINI-LINK TN MINI-LINK CN210 MINI-LINK CN510R1 MINI-LINK CN510R2 MINI-LINK CN810R1 MINI-LINK CN810R2 MINI-LINK 665x MINI-LINK 669x MINI-LINK 6366	11B, M15A, M16A, M17A, M17B, M17.Q4 (MINI-LINK TN, MINI-LINK LH) M12A (MINI-LINK CN210) M12A (MINI-LINK CN510R1) M16A (MINI-LINK CN510R2) M13B (MINI-LINK CN810R1) M16A (MINI-LINK CN810R2) M18.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q2 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q4 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M19.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366)	11B, M15A, M16A, M17A, M17B, M17.Q4 (MINI-LINK TN, MINI-LINK LH) M12A (MINI-LINK CN210) M12A (MINI-LINK CN510R1) M16A (MINI-LINK CN510R2) M13B (MINI-LINK CN810R1) M16A (MINI-LINK CN810R2) M18.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q2 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q4 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M19.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366)	Radio Link Input Min Power
		MINI-LINK PT 2020	M17B, 17.Q4		
		MINI-LINK 6351	M17B, 17.Q4		
		MINI-LINK 6351	M17A, M17B, 17.Q4		
		Fronthaul 6392	M17.Q4		
Radio Link Termination Input Power Variation		MINI-LINK LH MINI-LINK TN MINI-LINK CN210 MINI-LINK CN510R1 MINI-LINK CN510R2	11B, M15A, M16A, M17A, M17B, M17.Q4 (MINI-LINK TN, MINI-LINK LH) M12A (MINI-LINK CN210)	Radio Link Input Power Variation	



Node KPI Category	Node KPI Name	NHM Supported Node Types	Node Release	Name in KPI Management
		MINI-LINK CN810R1	M12A (MINI-LINK CN510R1)	
		MINI-LINK CN810R2	M16A (MINI-LINK CN510R2)	
		MINI-LINK 665x	M13B (MINI-LINK CN810R1)	
		MINI-LINK 669x	M16A (MINI-LINK CN810R2)	
		MINI-LINK 6366	M18.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366)	
		MINI-LINK PT 2020	M17B, 17.Q4	
		MINI-LINK 6351	M17B, 17.Q4	
		MINI-LINK 6351	M17A, M17B, 17.Q4	
		Fronthaul 6392	M17.Q4	
		Radio Link Termination Output Max Power	MINI-LINK LH MINI-LINK TN MINI-LINK CN210 MINI-LINK CN510R1 MINI-LINK CN510R2 MINI-LINK CN810R1 MINI-LINK CN810R2 MINI-LINK 665x MINI-LINK 669x MINI-LINK 6366	
	MINI-LINK PT 2020	M17B, 17.Q4		
	MINI-LINK 6351	M17B, 17.Q4		
	MINI-LINK 6351	M17A, M17B, 17.Q4		
	Fronthaul 6392	M17.Q4		



Node KPI Category	Node KPI Name	NHM Supported Node Types	Node Release	Name in KPI Management
	Radio Link Termination Output Min Power	MINI-LINK LH MINI-LINK TN MINI-LINK CN210 MINI-LINK CN510R1 MINI-LINK CN510R2 MINI-LINK CN810R1 MINI-LINK CN810R2 MINI-LINK 665x MINI-LINK 669x MINI-LINK 6366	11B, M15A, M16A, M17A, M17B, M17.Q4 (MINI-LINK TN, MINI-LINK LH) M12A (MINI-LINK CN210) M12A (MINI-LINK CN510R1) M16A (MINI-LINK CN510R2) M13B (MINI-LINK CN810R1) M16A (MINI-LINK CN810R2) M18.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q2 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q4 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M19.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366)	Radio Link Output Min Power
		MINI-LINK PT 2020	M17B, 17.Q4	
		MINI-LINK 6351	M17B, 17.Q4	
		MINI-LINK 6351	M17A, M17B, 17.Q4	
		Fronthaul 6392	M17.Q4	
	Radio Link Termination Output Power Variation	MINI-LINK LH MINI-LINK TN MINI-LINK CN210 MINI-LINK CN510R1 MINI-LINK CN510R2 MINI-LINK CN810R1 MINI-LINK CN810R2 MINI-LINK 665x MINI-LINK 669x MINI-LINK 6366	11B, M15A, M16A, M17A, M17B, M17.Q4 (MINI-LINK TN, MINI-LINK LH) M12A (MINI-LINK CN210) M12A (MINI-LINK CN510R1) M16A (MINI-LINK CN510R2) M13B (MINI-LINK CN810R1) M16A (MINI-LINK CN810R2) M18.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q2 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M18.Q4 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366) M19.Q1 (MINI-LINK-669x, MINI-LINK-665x, MINI-LINK-6366)	Radio Link Output Power Variation



Node KPI Category	Node KPI Name	NHM Supported Node Types	Node Release	Name in KPI Management	
		MINI-LINK PT 2020	M17B, 17.Q4		
		MINI-LINK 6351	M17B, 17.Q4		
		MINI-LINK 6351	M17A, M17B, 17.Q4		
		Fronthaul 6392	M17.Q4		
		TWAMP Average Two-Way Delay (μ s)	Router6672 Router6675 Router6x71 Router6274	R8B	Average Two-Way Delay (μ s)
		TWAMP Minimum Two-Way Delay (μ s)			Minimum Two-Way Delay (μ s)
		TWAMP Maximum Two-Way Delay (μ s)			Maximum Two-Way Delay (μ s)
		Ethernet Interface Queue Utilization			Queue Utilization On Physical Interfaces
		VLAN Queue Drop Ratio			Queue Drop Rate
		Ethernet Interface Queue Drop Ratio			
Other	Attached Users	SGSN-MME, vSGSN-MME			All ENM Supported Versions
	Attached Users	SGSN-MME, vSGSN-MME	All ENM Supported Versions	Attached Users GSM	
	Attached Users	SGSN-MME, vSGSN-MME	All ENM Supported Versions	Attached Users WCDMA	
Retainability	Paging Failure Ratio	SGSN-MME, vSGSN-MME	All ENM Supported Versions	Paging Failure Ratio LTE	
	Paging Failure Ratio	SGSN-MME, vSGSN-MME	All ENM Supported Versions	Paging Failure Ratio GSM	
	Paging Failure Ratio	SGSN-MME, vSGSN-MME	All ENM Supported Versions	Paging Failure Ratio WCDMA	