



**Environmental Engineering (EE);
Measurement method for
Energy efficiency of Core network equipment**

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Contents

Intellectual Property Rights	4
Foreword.....	4
Introduction	4
1 Scope	5
2 References	6
2.1 Normative references	6
2.2 Informative references	6
3 Definitions and abbreviations.....	6
3.1 Definitions	6
3.2 Abbreviations	7
4 Definition of Power consumption and metrics for Core networks	8
4.1 Black box.....	8
4.2 Site energy consumption	9
4.3 Power consumption	9
4.4 Shaping of weight coefficients	10
4.5 Energy efficiency	11
5 Measurement methods.....	11
5.1 Measurement basics	11
5.1.1 General.....	11
5.1.2 Measurement and test equipment requirements.....	11
5.2 Measurement conditions.....	12
5.2.1 Configuration.....	12
5.2.2 Environmental conditions	12
5.2.3 Power supply	12
5.3 Measurement procedure	12
5.3.1 Tests to be performed	12
5.3.2 Measurement report	13
Annex A (normative): Reference parameters for MGW	15
Annex B (normative): Reference parameters for HLR, AUC and EIR.....	16
B.1 Reference parameters for HLR and AUC	16
B.2 Reference parameters for EIR	17
Annex C (normative): Reference parameters for MSC	19
Annex D (normative): Reference parameters for GGSN	21
Annex E (normative): Reference parameters for SGSN	22
Annex F (normative): Reference parameters for MME.....	23
Annex G (normative): Reference parameters for SGW and PGW	24
Annex H (informative): Bibliography.....	25
History	26

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Foreword

This final draft ETSI Standard (ES) has been produced by ETSI Technical Committee Environmental Engineering (EE), and is now submitted for the ETSI standards Membership Approval Procedure.

Introduction

Energy efficiency is an increasingly important requirement for all modern systems. Governments, communication service providers, vendors, etc do all agree that energy efficiency is a critical "piece" in the joint strive for a more sustainable society.

With the present document, the industry gets a jointly agreed definition of metrics and measurement methods that - over time - can serve as a platform to excel, measure, and report energy efficiency of the core networks of telecommunication systems. The present document provides robust and reproducible measurements for products used in core telecom networks.

The present document defines energy efficiency metrics and measurement methods for mobile core equipment. In later revisions radio access control nodes and IMS core will be added.

Energy efficiency is defined as useful output normalized to energy consumption, and the assumption is that an energy efficient system handles more calls, subscribers, etc., with less energy. The present document promotes energy saving features as the traffic profile is a representation of the expected behavior of the equipment in operation, i.e. the power consumption is measured at different load levels when processing traffic mimicing a typical usage of the equipment.

The defined metrics can be used for comparing energy efficiency of different implementations (HW and SW) of the same function only. Energy efficiency of co-located functions can however not be compared using the methodology defined in the present document.