

# PUBLICLY AVAILABLE SPECIFICATION



**Specific absorption rate (SAR) measurement procedure for long term evolution (LTE) devices**



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**Specific absorption rate (SAR) measurement procedure for long term evolution (LTE) devices**

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## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Symbols and abbreviated terms.....	7
5 Protocol for SAR assessment .....	7
5.1 General LTE SAR testing considerations .....	7
5.1.1 Description of LTE Mode selection.....	7
5.2 Power and SAR Measurement Protocol.....	10
6 Uncertainty estimation .....	12
7 Measurement report .....	12
Annex A (informative) Supporting information .....	13
Annex B (informative) Maximum Power Reduction (MPR) .....	18
Annex C (informative) Power test conditions .....	19
Annex D (normative) RF Conducted Output Power Measurement.....	20
Annex E (informative) RF Conducted LTE Modes to be tested for Band 3, 7 and 20.....	21
Bibliography.....	28
Figure 1 – Use of conducted power for LTE Mode selection.....	10
Figure A.1 – Low, Middle, and High channel at 2 GHz band (Band 1).....	14
Figure A.2 – RF conducted power vs. 10g SAR.....	14
Figure A.3 – 1g SAR as a function of RF conducted power in various test conditions (dashed lines indicate $y=a*x$ linear regressions) .....	16
Table A.1 – CV of $\alpha$ .....	15
Table A.2 – Maximum CV of $\alpha$ found in Study 2 .....	16
Table B.1 – Maximum Power Reduction (MPR) for Power Class 3 .....	18
Table C.1 – Test Configuration Table without MPR .....	19
Table C.2 – Test Configuration Table with MPR.....	19
Table E.1 – Band 3 (1 710 MHz to 1 785 MHz) .....	21
Table E.2 – Band 7 (2 500 MHz to 2 570 MHz) .....	24
Table E.3 – Band 20 (832 MHz to 862 MHz) .....	26

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# **SPECIFIC ABSORPTION RATE (SAR) MEASUREMENT PROCEDURE FOR LONG TERM EVOLUTION (LTE) DEVICES**

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## INTRODUCTION

LTE technology shows an added complexity over previously available radio schemes and in order to configure and test LTE devices, many signal parameters have to be taken into account. The combinations of parameters in a given frequency band can result in hundreds of LTE Modes and SAR test configurations. The main purpose of this protocol is to support the demonstration of DUT compliance with applicable exposure limits based on a reasonable number of SAR evaluations.

## SPECIFIC ABSORPTION RATE (SAR) MEASUREMENT PROCEDURE FOR LONG TERM EVOLUTION (LTE) DEVICES

### 1 Scope

This Publicly Available Specification (PAS) applies to measurement procedures of Specific Absorption Rate (SAR) generated by devices with LTE (Long Term Evolution) technology specified by 3rd Generation Partnership Project (3GPP), Rel. 8 and 9 [1] where the devices are intended to be used with the radiating part in close proximity to the human head and body. This document supports both FDD and TDD modes. The objective of this document is to define the number of test conditions with respect to basic radio frequency aspects, i.e. channel bandwidths, number and offset of allocated resource blocks (RB), modulation, and maximum power reduction (MPR) for IEC 62209-1 and IEC 62209-2.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62209-1:2016, *Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Part 1: Devices used next to the ear (Frequency range of 300 MHz to 6 GHz)*

IEC 62209-2, *Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures – Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)*

ETSI TR 121 905, *Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Vocabulary for 3GPP Specifications*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ETSI TR 121 905 and the following apply.

#### 3.1

##### **LTE Mode**

specific operational characteristics of the DUT

Note 1 to entry: LTE Mode is the combination of channel frequency, channel bandwidth, modulation, number of resource blocks, the offset of the resource blocks within the bandwidth, and the MPR.

#### 3.2

##### **Device Position**

orientation and position of the DUT with respect to the phantom

#### 3.3

##### **Test Condition**

Test Condition refers to the combination of both the LTE Mode and Device Position