



TECHNICAL SPECIFICATION

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5G;
Active Antenna System (AAS) Base Station (BS)
conformance testing;
Part 1: conducted conformance testing
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Contents

Intellectual Property Rights	2
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	12
1 Scope	13
2 References	13
3 Definitions, symbols and abbreviations	15
3.1 Definitions	15
3.2 Symbols.....	19
3.3 Abbreviations	21
4 General test conditions and declarations	22
4.1 Measurement uncertainties and test requirements	22
4.1.1 General.....	22
4.1.2 Acceptable uncertainty of Test System.....	23
4.1.2.1 General	23
4.1.2.2 Measurement of transmitter	24
4.1.2.3 Measurement of receiver	25
4.1.3 Interpretation of measurement results.....	27
4.2 Conducted and radiated requirement reference points	28
4.3 Base station classes for AAS BS	28
4.4 Regional requirements.....	29
4.5 Operating bands and band categories	29
4.6 Channel arrangements	30
4.7 Requirements for AAS BS capable of multi-band operation	30
4.8 AAS BS configurations	31
4.8.1 Transmit configurations	31
4.8.2 Receive configurations	31
4.8.3 Power supply options.....	32
4.8.4 BS with integrated Iuant BS modem	32
4.9 Capability sets	32
4.10 Manufacturer declarations for AAS BS testing	33
4.11 Test signal configurations for AAS BS	39
4.11.1 General.....	39
4.11.1a NR Test signal used to build Test Configurations	39
4.11.2 Test signal configurations	40
4.11.2.1 ATC1: UTRA multicarrier operation	40
4.11.2.1.1 General	40
4.11.2.1.2 ATC1a generation	40
4.11.2.1.3 ATC1b generation	40
4.11.2.1.4 ATC1 power allocation	40
4.11.2.2 ANTC1: UTRA FDD multicarrier non-contiguous operation	40
4.11.2.2.1 General	40
4.11.2.2.2 ANTC1 generation	40
4.11.2.2.3 ANTC1 power allocation.....	41
4.11.2.3 ATC2: E-UTRA multicarrier operation	41
4.11.2.3.1 General	41
4.11.2.3.2 ATC2a generation	41
4.11.2.3.3 ATC2b generation	41
4.11.2.3.4 ATC2 power allocation	42
4.11.2.4 ANTC2: E-UTRA multicarrier non-contiguous operation.....	42
4.11.2.4.1 General	42
4.11.2.4.2 ANTC2 generation	42
4.11.2.4.3 ANTC2 power allocation.....	43
4.11.2.5 ATC3: UTRA and E-UTRA multi-RAT operation.....	43

4.11.2.5.1	General	43
4.11.2.5.2	ATC3a generation	43
4.11.2.5.3	ATC3b generation	43
4.11.2.5.4	ATC3 power allocation	44
4.11.2.6	ANTC3: UTRA and E-UTRA multi RAT non-contiguous operation.....	44
4.11.2.6.1	General	44
4.11.2.6.2	ANTC3a generation.....	44
4.11.2.6.3	ANTC3 power allocation.....	44
4.11.2.7	ATC4: Single carrier for receiver tests.....	45
4.11.2.7.1	ATC4a generation	45
4.11.2.7.2	ATC4b generation	45
4.11.2.7.3	ATC4c generation	45
4.11.2.7.4	ATC4d generation	45
4.11.2.8	Generation of MB-MSR test configurations	45
4.11.2.8.1	ATC5a: MB-MSR test configuration for full carrier allocation	45
4.11.2.8.2	ATC5b: MB-MSR test configuration with high PSD per carrier	46
4.11.2.9	ATC6: E-UTRA and NR multi RAT operation	47
4.11.2.9.1	General	47
4.11.2.9.2	ATC6 generation	47
4.11.2.9.3	ATC6 power allocation	48
4.11.2.10	ANTC6: E-UTRA and NR multi RAT non-contiguous operation.....	48
4.11.2.10.1	General	48
4.11.2.10.2	ANTC6 generation	48
4.11.2.10.3	ANTC6 power allocation.....	48
4.11.2.11	ATC7: NR multicarrier operation	48
4.11.2.11.1	General	48
4.11.2.11.2	ATC7 generation	48
4.11.2.11.3	ATC7 power allocation	49
4.11.2.12	ANTC7: NR multicarrier non-contiguous operation.....	49
4.11.2.12.1	General	49
4.11.2.12.2	ANTC7 generation	49
4.11.2.12.3	ANTC7 power allocation.....	49
4.12	RF channels and test models	50
4.12.1	RF channels	50
4.12.2	Test models	51
4.13	Format and interpretation of tests	52
5	Applicability of Requirements	53
5.1	General	53
5.2	Test configurations for TAB connectors for operating bands where MSR is supported	54
5.3	Test configurations for multi-carrier capable TAB connector(s) in operating bands where one RAT capability sets are supported.....	58
5.3.1	General.....	58
5.3.2	TAB connector supporting one RAT only MSR in the operating band.....	59
5.3.3	TAB connector supporting Single-RAT UTRA in the operating band.....	62
5.3.4	TAB connector supporting Single-RAT E-UTRA in the operating band.....	64
5.4	Test configurations for <i>Multi-band TAB connectors</i>	65
5.4.1	Multi-band TAB connector supporting MSR operation	65
5.4.2	Multi-band TAB connector supporting Single-RAT only	66
6	Conducted transmitter characteristics	68
6.1	General	68
6.2	Base station output power	69
6.2.1	General.....	69
6.2.2	Maximum output power.....	69
6.2.2.1	Definition and applicability.....	69
6.2.2.2	Minimum Requirement	69
6.2.2.3	Test Purpose	69
6.2.2.4	Method of test	69
6.2.2.4.1	Initial conditions	69
6.2.2.4.2	Procedure.....	70
6.2.2.5	Test Requirements.....	70

6.2.3	UTRA FDD primary CPICH power	70
6.2.3.1	Definition and applicability.....	70
6.2.3.2	Minimum requirement	70
6.2.3.3	Test purpose	71
6.2.3.4	Method of test	71
6.2.3.4.1	Initial conditions.....	71
6.2.3.4.2	Procedure.....	71
6.2.3.5	Test requirements.....	71
6.2.4	UTRA TDD primary CCPCH power.....	72
6.2.4.1	Definition and applicability.....	72
6.2.4.2	Minimum requirement	72
6.2.4.3	Test purpose	72
6.2.4.4	Method of test	72
6.2.4.4.1	Initial conditions.....	72
6.2.4.4.2	Procedure.....	73
6.2.4.5	Test requirements.....	73
6.2.5	UTRA FDD additional CPICH power for MIMO mode	74
6.2.5.1	Definition and applicability.....	74
6.2.5.2	Minimum requirement	74
6.2.5.3	Test purpose	75
6.2.5.4	Method of test	75
6.2.5.4.1	Initial conditions.....	75
6.2.5.4.2	Procedure.....	75
6.2.5.5	Test requirements.....	75
6.2.6	E-UTRA DL RS power.....	76
6.2.6.1	Definition and applicability.....	76
6.2.6.2	Minimum requirement	76
6.2.6.3	Test purpose	76
6.2.6.4	Method of test	76
6.2.6.4.1	Initial conditions.....	76
6.2.6.4.2	Procedure.....	77
6.2.6.5	Test requirements.....	77
6.3	Output power dynamics.....	77
6.3.1	General.....	77
6.3.2	UTRA Inner loop power control in the downlink.....	77
6.3.2.1	Definition and applicability.....	77
6.3.2.2	Minimum requirement	77
6.3.2.3	Test purpose	78
6.3.2.4	Method of test	78
6.3.2.4.1	Initial conditions.....	78
6.3.2.4.2	Procedure.....	79
6.3.2.5	Test requirements.....	80
6.3.2.5.1	UTRA FDD	80
6.3.2.5.2	UTRA TDD	80
6.3.3	Power control dynamic range	81
6.3.3.1	Definition and applicability.....	81
6.3.3.2	Minimum requirement	81
6.3.3.3	Test purpose	81
6.3.3.4	Method of test	81
6.3.3.4.1	Initial conditions.....	81
6.3.3.4.2	Procedure.....	82
6.3.3.5	Test requirements.....	83
6.3.3.5.1	UTRA FDD	83
6.3.3.5.2	UTRA TDD	83
6.3.4	Total power dynamic range	83
6.3.4.1	Definition and applicability.....	83
6.3.4.2	Minimum requirement	84
6.3.4.3	Test purpose	84
6.3.4.4	Method of test	84
6.3.4.4.1	Initial conditions.....	84
6.3.4.4.2	Procedure.....	84
6.3.4.5	Test requirements.....	86

6.3.4.5.1	UTRA FDD	86
6.3.4.5.2	E-UTRA	86
6.3.4.5.3	NR	86
6.3.5	IPDL time mask	87
6.3.5.1	Definition and applicability.....	87
6.3.5.2	Minimum requirement	87
6.3.5.3	Test purpose	87
6.3.5.4	Method of test	87
6.3.5.4.1	Initial conditions	87
6.3.5.4.2	Procedure.....	87
6.3.5.5	Test requirements	88
6.3.6	RE Power control dynamic range	88
6.3.6.1	Definition and applicability.....	88
6.3.6.2	Minimum requirement	88
6.3.6.3	Method of test	88
6.4	Transmit ON/OFF power	89
6.4.1	General.....	89
6.4.2	Transmitter OFF power	89
6.4.2.1	Definition and applicability.....	89
6.4.2.2	Minimum requirement	89
6.4.2.3	Test purpose	89
6.4.2.4	Method of test	89
6.4.2.4.1	Initial conditions	89
6.4.2.4.2	Procedure.....	90
6.4.2.5	Test requirements	90
6.4.3	Transmitter transient period.....	90
6.4.3.1	Definition and applicability.....	90
6.4.3.2	Minimum requirement	91
6.4.3.3	Test purpose	91
6.4.3.4	Method of test	91
6.4.3.4.1	Initial conditions	91
6.4.3.4.2	Procedure.....	92
6.4.3.5	Test requirements	93
6.4.3.5.1	MSR operation	93
6.4.3.5.1	UTRA TDD operation.....	93
6.4.3.5.1	E-UTRA operation	93
6.5	Transmitted signal quality	93
6.5.1	General.....	93
6.5.2	Frequency error.....	94
6.5.2.1	Definition and applicability.....	94
6.5.2.2	Minimum Requirement	94
6.5.2.3	Test purpose	94
6.5.2.4	Method of test	94
6.5.2.5	Test Requirements.....	94
6.5.2.5.1	UTRA FDD test requirement	94
6.5.2.5.2	UTRA TDD test requirement	94
6.5.2.5.3	E-UTRA and NR test requirement	94
6.5.3	Time alignment error	95
6.5.3.1	Definition and applicability.....	95
6.5.3.2	Minimum requirement	95
6.5.3.3	Test purpose	95
6.5.3.4	Method of test	95
6.5.3.4.1	Initial conditions	95
6.5.3.4.2	Procedure.....	96
6.5.3.5	Test requirement	97
6.5.3.5.1	UTRA FDD test requirement	97
6.5.3.5.2	UTRA TDD test requirement	98
6.5.3.5.3	E-UTRA test requirement.....	98
6.5.3.5.4	NR test requirement.....	98
6.5.4	Modulation quality.....	98
6.5.4.1	Definition and applicability.....	98
6.5.4.2	Minimum Requirement	98

6.5.4.3	Test purpose	98
6.5.4.4	UTRA FDD method of test	99
6.5.4.4.1	Initial conditions	99
6.5.4.4.2	Procedure	99
6.5.4.5	UTRA TDD method of test	100
6.5.4.5.1	Initial conditions	100
6.5.4.5.2	Procedure	101
6.5.4.6	E-UTRA and NR method of test	102
6.5.4.6.1	Initial conditions	102
6.5.4.6.2	Procedure	103
6.5.4.7	Test Requirements	104
6.5.4.7.1	UTRA FDD test requirement	104
6.5.4.7.2	UTRA TDD test requirement	104
6.5.4.7.3	E-UTRA and NR test requirement	104
6.6	Unwanted Emissions	105
6.6.1	General	105
6.6.2	Occupied bandwidth	105
6.6.2.1	Definition and applicability	105
6.6.2.2	Minimum requirement	105
6.6.2.3	Test purpose	106
6.6.2.4	Method of test	106
6.6.2.4.1	Initial conditions	106
6.6.2.4.2	Procedure	107
6.6.2.5	Test requirements	109
6.6.2.5.1	MSR	109
6.6.2.5.2	UTRA FDD	109
6.6.2.5.3	UTRA TDD	109
6.6.2.5.4	E-UTRA	109
6.6.3	Adjacent Channel Leakage power Ratio	110
6.6.3.1	Definition and applicability	110
6.6.3.2	Minimum requirement	110
6.6.3.3	Test purpose	110
6.6.3.4	Method of test	110
6.6.3.4.1	Initial conditions	110
6.6.3.4.2	Procedure	112
6.6.3.5	Test requirements	114
6.6.3.5.1	General Requirements	114
6.6.3.5.2	Absolute Limits	114
6.6.3.5.3	MSR	114
6.6.3.5.4	UTRA FDD	119
6.6.3.5.5	UTRA TDD, 1,28Mcps option	121
6.6.3.5.6	E-UTRA	121
6.6.4	Spectrum emission mask	124
6.6.4.1	Definition and applicability	124
6.6.4.2	Minimum requirement	124
6.6.4.3	Test purpose	124
6.6.4.4	Method of test	124
6.6.4.4.1	Initial conditions	124
6.6.4.4.2	Procedure	125
6.6.4.5	Test requirements	127
6.6.4.5.1	General	127
6.6.4.5.2	Basic Limits	127
6.6.5	Operating band unwanted emission	138
6.6.5.1	Definition and applicability	138
6.6.5.2	Minimum requirement	139
6.6.5.3	Test purpose	139
6.6.5.4	Method of test	139
6.6.5.4.1	Initial conditions	139
6.6.5.4.2	Procedure	139
6.6.5.5	Test requirements	140
6.6.5.5.1	General	140
6.6.5.5.2	Basic Limits for MSR Band Categories 1 and 3	140

6.6.5.5.3	Basic Limits for MSR Band Category 2.....	149
6.6.5.5.4	Basic Limits for MSR Additional requirements.....	156
6.6.5.5.5	Basic Limits for E-UTRA.....	158
6.6.6	Spurious emission.....	181
6.6.6.1	Definition and applicability.....	181
6.6.6.2	Minimum requirement.....	182
6.6.6.3	Test purpose.....	182
6.6.6.4	Method of test.....	182
6.6.6.4.1	Initial conditions.....	182
6.6.6.4.2	Procedure.....	182
6.6.6.5	Test requirements.....	183
6.6.6.5.1	General.....	183
6.6.6.5.2	Basic limits.....	183
6.7	Transmitter intermodulation.....	204
6.7.1	Definition and applicability.....	204
6.7.1.1	General.....	204
6.7.2	Minimum requirement.....	205
6.7.3	Test purpose.....	205
6.7.4	Method of test.....	205
6.7.4.1	Initial conditions.....	205
6.7.4.2	Procedure.....	205
6.7.5	Test requirements.....	208
6.7.5.1	MSR test requirements.....	208
6.7.5.1.1	General test requirement.....	208
6.7.5.1.2	Additional test requirement (BC1 and BC2).....	209
6.7.5.1.3	Additional test requirement (BC3).....	209
6.7.5.1.4	Intra-system test requirement.....	209
6.7.5.2	Single RAT UTRA operation.....	209
6.7.5.2.1	General test requirement for UTRA FDD.....	209
6.7.5.2.2	General test requirement for UTRA TDD.....	210
6.7.5.2.3	Intra-system test requirement.....	210
6.7.5.4	Single RAT E-UTRA operation.....	210
6.7.5.4.1	General test requirement.....	210
6.7.5.4.2	Void.....	210
6.7.5.4.3	Intra-system test requirement.....	210
7	Conducted receiver characteristics.....	211
7.1	General.....	211
7.2	Reference sensitivity level.....	211
7.2.1	Definition and applicability.....	211
7.2.2	Minimum Requirement.....	211
7.2.3	Test Purpose.....	212
7.2.4	Method of test.....	212
7.2.4.1	Initial conditions.....	212
7.2.4.2	Procedure.....	212
7.2.5	Test Requirements.....	213
7.2.5.1	UTRA FDD operation.....	213
7.2.5.2	UTRA TDD 1,28 Mcps option operation.....	213
7.2.5.3	E-UTRA operation.....	214
7.2.5.4	NR operation.....	215
7.3	Dynamic range.....	216
7.3.1	Definition and applicability.....	216
7.3.2	Minimum requirement.....	216
7.3.3	Test purpose.....	217
7.3.4	Method of test.....	217
7.3.4.1	Initial conditions.....	217
7.3.4.2	Procedure.....	217
7.3.5	Test requirements.....	218
7.3.5.1	UTRA FDD operation.....	218
7.3.5.2	UTRA TDD 1,28 Mcps option operation.....	218
7.3.5.3	E-UTRA operation.....	218
7.3.5.4	NR operation.....	220

7.4	Adjacent channel selectivity and narrowband blocking	223
7.4.1	Definition and applicability	223
7.4.2	Minimum requirement	224
7.4.4	Method of test	224
7.4.4.1	Initial conditions	224
7.4.4.2	Procedure	225
7.4.4.2.1	General procedure	225
7.4.4.2.2	MSR operation	225
7.4.4.2.3	Single RAT UTRA FDD operation	226
7.4.4.2.4	Single RAT UTRA TDD 1,28Mcps option operation	226
7.4.4.2.5	Single RAT E-UTRA operation	226
7.4.5	Test requirements	227
7.4.5.1	MSR operation	227
7.4.5.1.1	General blocking test requirement	227
7.4.5.1.2	General narrowband blocking test requirement	228
7.4.5.1.3	Additional BC3 blocking test requirement	229
7.4.5.2	Single RAT UTRA FDD operation	230
7.4.5.3	Single RAT UTRA TDD 1,28 Mcps option operation	230
7.4.5.4	Single RAT E-UTRA operation	231
7.5	Blocking	233
7.5.1	Definition and applicability	233
7.5.2	Minimum requirement	233
7.5.3	Test purpose	234
7.5.4	Method of test	234
7.5.4.1	Initial conditions	234
7.5.4.2	Procedure	234
7.5.4.2.1	General Procedure	234
7.5.4.2.2	MSR operation	234
7.5.4.2.3	Single RAT UTRA FDD operation	235
7.5.4.2.4	Single RAT UTRA TDD 1,28 Mcps option operation	235
7.5.4.2.5	Single RAT E-UTRA operation	236
7.5.5	Test requirements	236
7.5.5.1	MSR operation	236
7.5.5.1.1	General out-of-band blocking test requirements	236
7.5.5.1.2	Co-location test requirements	237
7.5.5.2	Single RAT UTRA FDD operation	241
7.5.5.3	Single RAT UTRA TDD 1,28 Mcps option operation	260
7.5.5.3.1	General requirements	260
7.5.5.3.2	Co-location with GSM, DCS, UTRA FDD and/or E-UTRA FDD, UTRA TDD and/or E-UTRA TDD	264
7.5.5.4	Single RAT E-UTRA operation	268
7.5.5.4.1	General test requirement	268
7.5.5.4.2	Co-location with other base stations	272
7.6	Receiver spurious emissions	276
7.6.1	Definition and applicability	276
7.6.2	Minimum Requirement	277
7.6.3	Test Purpose	277
7.6.4	Method of test	277
7.6.4.1	Initial conditions	277
7.6.4.2	Procedure	277
7.6.4.2.1	General procedure	277
7.6.4.2.2	MSR operation	277
7.6.4.2.3	Single RAT UTRA FDD operation	278
7.6.4.2.4	Single RAT UTRA TDD 1,28Mcps option operation	278
7.6.4.2.5	Single RAT E-UTRA operation	279
7.6.5	Test Requirements	280
7.6.5.1	General	280
7.6.5.2	Basic limits	280
7.6.5.2.1	MSR operation	280
7.6.5.2.2	Single RAT UTRA FDD operation	280
7.6.5.2.3	Single RAT UTRA TDD 1,28Mcps option operation	281
7.6.5.2.4	Single RAT E-UTRA operation	281

7.7	Receiver intermodulation	282
7.7.1	Definition and applicability	282
7.7.2	Minimum requirement	282
7.7.3	Test purpose.....	283
7.7.4	Method of test	283
7.7.4.1	Initial conditions	283
7.7.4.2	Procedure	283
7.7.4.2.1	General procedure	283
7.7.4.2.2	MSR operation	283
7.7.4.2.3	Single RAT UTRA FDD operation.....	284
7.7.4.2.4	Single RAT UTRA TDD 1,28Mcps option operation.....	284
7.7.4.2.5	Single RAT E-UTRA operation	284
7.7.5	Test requirements.....	285
7.7.5.1	MSR operation	285
7.7.5.1.1	General intermodulation test requirement	285
7.7.5.1.2	General narrowband intermodulation test requirement	286
7.7.5.2	Single RAT UTRA FDD operation.....	289
7.7.5.3	Single RAT UTRA TDD 1,28Mcps option operation.....	289
7.7.5.4	Single RAT E-UTRA operation.....	290
7.8	In-channel selectivity	293
7.8.1	Definition and applicability	293
7.8.2	Minimum requirement	293
7.8.3	Test purpose.....	293
7.8.4	Method of test	294
7.8.4.1	Initial conditions	294
7.8.4.2	Procedure	294
7.8.5	Test requirements.....	294
8	Performance requirements.....	298
8.1	General	298
8.2	Performance requirements for MSR.....	299
8.3	Performance requirements for UTRA FDD	299
8.3.1	Definition and applicability	299
8.3.2	Minimum Requirement	300
8.3.3	Test purpose.....	300
8.3.4	Method of test	300
8.3.4.1	Initial Conditions.....	300
8.3.4.2	Procedure	300
8.3.5	Test Requirement.....	300
8.4	Performance requirements for UTRA TDD	301
8.4.1	Definition and applicability	301
8.4.2	Minimum Requirement	301
8.4.3	Test purpose.....	301
8.4.4	Method of test	302
8.4.4.1	Initial Conditions.....	302
8.4.4.2	Procedure	302
8.4.5	Test Requirement.....	302
8.5	Performance requirements for E-UTRA.....	302
8.5.1	Definition and applicability	302
8.5.2	Minimum Requirement	303
8.5.3	Test purpose.....	303
8.5.4	Method of test	303
8.5.4.1	Initial Conditions.....	303
8.5.4.2	Procedure	303
8.5.5	Test Requirement.....	303
8.6	Performance requirements for NR.....	303
8.6.1	Definition and applicability	303
8.6.2	Minimum Requirement	304
8.6.3	Test purpose.....	304
8.6.4	Method of test	304
8.6.4.1	Initial conditions	304
8.6.4.2	Procedure	304

8.6.5	Test Requirement.....	304
Annex A (normative): Characteristics of interfering signals.....		306
Annex B (normative): Environmental requirements for the BS equipment.....		307
B.1	General	307
B.2	Normal test environment.....	307
B.3	Extreme test environment.....	307
B.3.1	General	307
B.3.2	Extreme temperature	307
B.4	Vibration.....	308
B.5	Power supply	308
B.6	Measurement of test environments.....	308
Annex C (informative): Test tolerances and derivation of test requirements.....		309
Annex D (informative): Measurement system set-up.....		310
D.1	Transmitter	310
D.1.1	AAS BS output power, transmitter ON/OFF power, modulation quality, frequency error and operating band unwanted emissions	310
D.1.2	Transmitter intermodulation.....	311
D.1.3	Transmitter spurious emissions	311
D.2	Receiver.....	313
D.2.1	Reference sensitivity level.....	313
D.2.2	Receiver Dynamic Range	313
D.2.3	Receiver Adjacent channel selectivity and narrowband blocking	314
D.2.4	Receiver spurious emissions.....	314
D.2.5	Receiver In-channel selectivity	315
D.2.6	Receiver Intermodulation	316
Annex E (informative): Change history		317
History		321

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

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1 Scope

The present document specifies the conducted test methods and conformance requirements for *single RAT E-UTRA operation*, *single RAT UTRA operation* (FDD and TDD) and Multi-Standard Radio (MSR) UTRA, E-UTRA and NR Active Antenna System (AAS) Base Station (BS). These have been derived from, and are consistent with the non-AAS BS specifications in TS 25.104 [2], TS 25.105 [3], TS 36.104 [4], TS 38.104 [36] or TS 37.104 [5]. The technical specification TS 37.145 is in 2 parts, part TS 37.145-1 (the present document) covers conducted requirements and part TS 37.145-2 [40] covers radiated requirements.

The present document does not establish conducted test methods and conformance requirements for Band 46 operation as it is not supported by AAS BS, but Band 46 test requirements are still applicable for AAS BS for protection of and against Band 46 operation.

The present document does not establish conducted test methods and conformance requirements for Narrow-Band Internet of Things (NB-IoT) in band, NB-IoT guard band, or standalone NB-IoT operation, for AAS BS in *single RAT E-UTRA operation* as defined in TS 36.141 [14], or for AAS BS in *MSR operation* using E-UTRA as defined in TS 37.141 [13].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications"
- [2] 3GPP TS 25.104: "Base Station (BS) radio transmission and reception (FDD)"
- [3] 3GPP TS 25.105: "Base Station (BS) radio transmission and reception (TDD)"
- [4] 3GPP TS 36.104: "Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) radio transmission and reception"
- [5] 3GPP TS 37.104: "NR, E-UTRA, UTRA and GSM/EDGE; Multi-Standard Radio (MSR) Base Station (BS) radio transmission and reception"
- [6] 3GPP TS 37.105: "Active Antenna System (AAS) Base Station (BS) transmission and reception"
- [7] Recommendation ITU-R M.1545: "Measurement uncertainty as it applies to test limits for the terrestrial component of International Mobile Telecommunications-2000"
- [8] 3GPP TS 37.105 (V14.1.0): "Active Antenna System (AAS) Base Station (BS) radio transmission and reception (Release 14)"
- [9] 3GPP TS 25.104 (V14.2.0): "Base Station (BS) radio transmission and reception (FDD) (Release 14)"
- [10] 3GPP TS 25.105 (V14.0.0): "Base Station (BS) radio transmission and reception (TDD) (Release 14)"
- [11] 3GPP TS 36.104 (V14.4.0): "Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) radio transmission and reception (Release 14)"
- [12] 3GPP TS 37.104 (V14.4.0): "E-UTRA, UTRA and GSM/EDGE Multi-Standard Radio (MSR) Base Station (BS) radio transmission and reception (Release 14)"

- [13] 3GPP TS 37.141: "NR, E-UTRA, UTRA and GSM/EDGE; Multi-Standard Radio (MSR) Base Station (BS) conformance testing"
- [14] 3GPP TS 36.141: "Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) conformance testing"
- [15] 3GPP TS 25.141: "Base Station (BS) conformance testing (FDD)"
- [16] 3GPP TS 37.141 (V14.4.0): "E-UTRA, UTRA and GSM/EDGE; Multi-Standard Radio (MSR) Base Station (BS) conformance testing (Release 14)"
- [17] 3GPP TS 36.141 (V14.4.0): "Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) conformance testing (Release 14)"
- [18] 3GPP TS 25.141 (V14.2.0): "Base Station (BS) conformance testing (FDD) (Release 14)"
- [19] 3GPP TS 25.142: "Base Station (BS) conformance testing (TDD)"
- [20] 3GPP TS 25.142 (V14.0.0): "Base Station (BS) conformance testing (TDD) (Release 14)"
- [21] 3GPP TR 25.942: "Radio Frequency (RF) system scenarios"
- [22] 3GPP TS 45.004: "Digital cellular telecommunications system (Phase 2+); Modulation"
- [23] 3GPP TS 25.214: "Physical layer procedures (FDD)"
- [24] "Title 47 of the Code of Federal Regulations (CFR)", Federal Communications Commission
- [25] CEPT ECC Decision (13)03: "The harmonised use of the frequency band 1452-1492 MHz for Mobile/Fixed Communications Networks Supplemental Downlink (MFCN SDL)"
- [26] IEC 60721: "Classification of environmental conditions"
- [27] IEC 60721-3-3: "Classification of environmental conditions - Part 3-3: Classification of groups of environmental parameters and their severities - Stationary use at weather protected locations"
- [28] IEC 60721-3-4: "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weather protected locations"
- [29] ETSI EN 300 019-1-3: "Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-3: Classification of environmental conditions; Stationary use at weatherprotected locations"
- [30] ETSI EN 300 019-1-4: "Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-4: Classification of environmental conditions; Stationary use at non-weatherprotected locations"
- [31] IEC 60068-2-1 (2007): "Environmental testing - Part 2: Tests. Tests A: Cold"
- [32] IEC 60068-2-2 (2007): "Environmental testing - Part 2: Tests. Tests B: Dry heat"
- [33] IEC 60068-2-6 (2007): "Environmental testing - Part 2: Tests - Test Fc: Vibration (sinusoidal)"
- [34] Recommendation ITU-T O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate"
- [35] Recommendation ITU-R SM.329: "Unwanted emissions in the spurious domain"
- [36] 3GPP TS 38.104: "NR; Base Station (BS) radio transmission and reception"
- [37] 3GPP TS 38.141-1: "NR;Base Station (BS) conformance testing; Part 1: Conducted conformance testing"
- [38] FCC publication number 662911: "Emissions Testing of Transmitters with Multiple Outputs in the Same Band"