

Annex to SSAC Paper 1/2025

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PERFORMANCE SPECIFICATION

FOR NEW RADIO (NR)

BASE STATION

FOREWORD

1. This specification is prescribed under section 32D of the Telecommunications Ordinance (Cap 106) (“the Ordinance”) to set out the technical and evaluation requirements for New Radio (NR) Base Station (BS). Equipment falling into the scope of this specification shall meet the stipulated requirements.
2. Under the Ordinance, the possession or use of any radiocommunications apparatus or any apparatus emitting radio frequency energy must be covered by an appropriate licence issued by the Communications Authority (CA) with the exception of those specifically exempted from licensing under the Ordinance, such as those covered by the Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) Order (Cap 106Z).
3. At present, the Office of the Communications Authority (OFCA) operates a **Hong Kong Telecommunications Equipment Evaluation and Certification (HKTEC) Scheme**. Details of the HKTEC Scheme can be found in the information note OFCA I 421. Under the HKTEC Scheme, suppliers or manufacturers shall apply for certification of their apparatus against this specification. The application procedures for certification of radiocommunications apparatus can be found in the information note OFCA I 401.
4. The CA may amend any part of this specification as and when it deems necessary.
5. In case of doubt about the interpretation of this specification, the methods of carrying out the test and the validity of statements made by the equipment manufacturers or suppliers about the equipment, the decision of the CA shall be final.
6. The HKCA specifications and information notes issued by the CA can be downloaded from OFCA’s website at <http://www.ofca.gov.hk>. Enquiries about this specification may be directed to -

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AMENDMENT TABLE

Item	Issue No.	Clause	Description
1.	Issue 1 February 2024	All	First Release
<u>2.</u>	<u>Issue 2</u> <u>January 2025</u>	<u>2</u>	<u>Added 6425 – 7125 MHz in the unpaired band</u>
<u>3.</u>	<u>Issue 2</u> <u>January 2025</u>	<u>3.3, 5</u>	<u>Added the reference to the ITU Radio Regulations on the additional technical requirements for the 6425 – 7125 MHz band</u>

CONTENT

1. SCOPE
2. OPERATING FREQUENCIES
3. TECHNICAL REQUIREMENTS
4. EVALUATION REQUIREMENTS
5. REFERENCE

1. SCOPE

This specification sets out the performance and evaluation requirements for New Radio (NR) Base Station (BS) for mobile communications services (hereafter referred to as “the equipment”).

2. OPERATING FREQUENCIES

The frequency bands for the equipment are as follows -

	BS Receive	BS Transmit
Paired Band	703 – 738 MHz	758 – 793 MHz
	825 – 837.5 MHz	870 – 882.5 MHz
	880 – 915 MHz	925 – 960 MHz
	1710 – 1785 MHz	1805 – 1880 MHz
	1920 – 1980 MHz	2110 – 2170 MHz
	2500 – 2570 MHz	2620 – 2690 MHz
Unpaired Band	2300 – 2390 MHz	
	3300 – 3400 MHz	
	3400 – 3600 MHz	
	4800 – 4960 MHz	
	<u>6425 – 7125 MHz</u>	
	24.25 – 28.35 GHz	

3. TECHNICAL REQUIREMENTS

3.1 The equipment shall meet the technical requirements specified in all relevant standards given in subclause (a) or (b) below –

- (a) Standards published by the European Telecommunications Standards Institute (ETSI):
 - (i) ETSI EN 301 908-1 “IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 1: Introduction and common requirements”
 - (ii) ETSI EN 301 908-24 “IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 24: New Radio (NR) Base Stations (BS)”

(b) Standards published by the 3rd Generation Partnership Project (3GPP) (excluding test items that are not covered in the ETSI standards in subclause (a) above):

(i) 3GPP TS 38.141-1 “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; Base Station (BS) conformance testing, Part 1: Conducted conformance testing”

(ii) 3GPP TS 38.141-2 “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; Base Station (BS) conformance testing, Part 2: Radiated conformance testing”

3.2 For equipment operating in the 3400 – 3600 MHz and 4800 – 4960 MHz bands, any unwanted emissions in the 3700 – 4200 MHz band shall not exceed -52 dBm/MHz.

3.3 For equipment operating in the 6425 – 7125 MHz band, it shall comply with the requirements specified in Resolution 220 of the International Telecommunication Union (ITU) Radio Regulations, on the level of expected power spectral density as a function of the vertical angle above the horizon.

4. EVALUATION REQUIREMENTS

The equipment shall comply with the operating frequencies and technical requirements as specified in clauses 2 and 3 respectively. Compliance with the technical requirements shall be evaluated in accordance with the procedures specified in the respective standards as given in clause 3.

5. REFERENCE

(a) ETSI EN 301 908-1 “IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 1: Introduction and common requirements”

(b) ETSI EN 301 908-24 “IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 24: New Radio (NR) Base Stations (BS)”

(c) 3GPP TS 38.104 “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; Base Station (BS) radio transmission and reception”

(d) 3GPP TS 38.141-1 “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; Base Station (BS) conformance testing; Part 1: Conducted conformance testing”

(e) 3GPP TS 38.141-2 “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; Base Station (BS) conformance testing; Part 2: Radiated conformance testing”

(f) Resolution 220 of the ITU Radio Regulations

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