

# **ITU-R M.2174-0 建议书**

**(02/2026)**

移动、无线电测定、业余无线电  
以及相关卫星业务

**使用IMT-2020地面无线电  
接口的基站的无用发射特性**



## 前言

无线电通信部门的作用是确保所有无线电通信业务，包括卫星业务，合理、公平、有效和经济地使用无线电频谱，并开展没有频率范围限制的研究，在此基础上通过建议书。

无线电通信部门制定规章制度和政策的职能由世界和区域无线电通信大会以及无线电通信全会完成，并得到各研究组的支持。

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RS	遥感系统
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SM	频谱管理
SNG	卫星新闻采集
TF	时间信号和标准频率发射
V	词汇和相关课题

注：本ITU-R建议书英文版已按ITU-R第1号决议规定的程序批准。

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## ITU-R M.2174-0 建议书

使用IMT-2020地面无线电接口的  
基站的无用发射特性

(2026年)

**范围**

根据外部组织提交给国际电联的资料，本建议书提供了使用IMT-2020地面组件无线电接口并工作于为IMT确定的频段上的基站的无用发射特性。

只要符合《无线电规则》，这些无用发射特性可被主管部门用来确保IMT-2020地面网络之间的系统内兼容性。

**关键词**

基站、发射特性、IMT-2020、带外、杂散、无用

**缩略语**

ACLR	相邻信道泄漏比
BS	基站
CA	载波聚合
CACLR	累积ACLR
CLTA	同址并置测试天线
DFT	离散傅里叶变换
DL	下行链路
DTT	数字地面电视
EIRP	等效全向辐射功率
FR	频率范围
GPS	全球定位系统
IMT	国际移动通信
MBW	测量带宽
NR	新空口
OoB	带外
OTA	空口
PHS	个人手持电话系统
RDN	无线电分配网络
RIB	辐射接口边界
RIT	无线电接口技术

RR	无线电规则
SCS	子载波间隔
SRIT	无线电接口技术集
TAB	收发机阵列边界
TRP	总辐射功率
TT	测试容差
UL	上行链路

其他术语可在3GPP TR 21.905 “3GPP规范词汇”号文件中找到。

### 相关文件：国际电联的建议书、报告、文件和手册<sup>1</sup>

ITU-R SM.329建议书 – 杂散域中的无用发射

ITU-R M.1036建议书 – 在《无线电规则》为国际移动通信（IMT）确定的频段上实施IMT地面组件而做的频率安排

ITU-R SM.1541建议书 – 带外域中的无用发射

ITU-R M.1545建议书 – 适用于国际移动通信-2000（IMT-2020）地面组件的测试限值的测量不确定性

ITU-R M.2012建议书 – 高级国际移动通信（IMT-Advanced）地面无线电接口的详细规范

ITU-R M.2070建议书 – 使用IMT-Advanced地面无线电接口的基站的无用发射特性

ITU-R M.2071建议书 – 使用IMT-Advanced地面无线电接口的移动电台的无用发射特性

ITU-R M.2150建议书 – 国际移动通信-2020（IMT-2020）地面无线电接口的详细规范

国际电联无线电通信全会，

考虑到

- a) 根据《无线电规则》（RR）第**1.146**款，无用发射由杂散发射和带外发射（OoB）共同构成，杂散发射和带外发射分别定义于《无线电规则》第**1.145**款和第**1.144**款。
- b) 有必要对IMT-2020基站（BS）的无用发射最高允许电平加以限制，以保护其他无线电系统和业务免受干扰，并实现不同技术之间的共存；
- c) 无用发射限值的协调统一将促进全球使用和进入全球市场；然而，国家/区域层面的无用发射限值仍可能存在差异；
- d) 无用发射限值除了取决于工作于其他频段上的业务之外，还尤其取决于发射机的发射特性、国际电联杂散发射限值以及国家标准和规则，

认识到

- a) 《无线电规则》第**3.3**款；
- b) ITU-R M.1036建议书提供了在《无线电规则》为国际移动通信（IMT）确定的频段上实施IMT地面组件而做的频率安排；

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<sup>1</sup> 应使用最新版本的有效建议书/报告。

- c) ITU-R SM.329建议书提供了杂散域中无用发射的限值以及杂散发射的测量方法；
- d) ITU-R SM.1541建议书提供了带外（OoB）域中无用发射的限值，并鼓励为各系统和各频段制定更为具体的限值；
- e) ITU-R M.2150建议书提供了《国际移动通信-2020（IMT-2020）地面无线电接口的详细规范》，并特别建议IMT-2020地面无线电接口应包括“3GPP 5G-SRIT”、“3GPP 5G-RIT”、“5Gi-RIT”和“DECT 5G-SRIT”，

#### 注意到

为体现IMT-2020无线电接口技术的广泛适用性，并保持与技术规范的一致性，本建议书的注释和附件 – 基于标准制定机构的持续工作成果 – 可包含反映与在未确定用于IMT的频段上使用这些技术有关的信息的资料，

#### 建议

- 1 应考虑到与附件1<sup>2</sup>中IMT-2020地面组件的3GPP-5G SRIT无线电接口规范相对应的基站的无用发射特性，以确保使用3GPP 5G-SRIT无线电接口的IMT-2020地面网络之间的兼容性；
- 2 对表1-2A和1-3A<sup>3</sup>规定的频段，应考虑到附件2中IMT-2020地面组件的3GPP-5G RIT无线电接口规范相对应的基站的无用发射特性，以确保使用3GPP 5G-RIT无线电接口的IMT-2020地面网络之间的兼容性；
- 3 应考虑到与附件3<sup>4</sup>中IMT-2020地面组件的5Gi无线电接口规范相对应的基站的无用发射特性，以确保使用5Gi无线电接口的IMT-2020地面网络之间的兼容性；
- 4 应考虑到与附件4<sup>5</sup>中IMT-2020地面组件的DECT-2020 NR-RIT组件无线电接口规范相对应的基站的无用发射特性，以确保使用DECT-2020 NR-RIT组件无线电接口的IMT-2020地面网络之间的兼容性。

附件：4份

- 
- 2 对工作于《无线电规则》未确定划给IMT的频段上的3GPP-5G SRIT基站，附件1提供了无用发射特性以供参考，这些特性可用于国家层面的决策。
  - 3 对工作于表1-2B和1-3B规定的频段上的3GPP-5G RIT基站，附件2提供了无用发射特性以供参考，这些特性可用于国家层面的决策。
  - 4 对工作于《无线电规则》未确定划给IMT的频段上的5Gi基站，附件3提供了无用发射特性以供参考，这些特性可用于国家层面的决策。
  - 5 对工作于《无线电规则》未确定划给IMT的频段上的DECT-2020 NR-RIT组件基站，附件4提供了无用发射特性以供参考，这些特性可用于国家层面的决策。

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## 附件1

### 3GPP 5G-SRIT<sup>6</sup>

3GPP 5G-SRIT是一组无线电接口技术（RIT），由作为一个组件RIT的E-UTRA/LTE和作为另一个组件RIT的NR共同组成。关于E-UTRA/LTE基站的无用发射特性的信息请参见ITU-R M.2070建议书的附件1。关于NR基站的无用发射特性的信息请参见随后的本建议书的附件2“3GPP 5G-RIT”。

## 附件2

### 3GPP 5G-RIT<sup>7</sup>

本附件包括关于NR基站NR载波的无用发射特性的信息。

本附件结构如下：

- 第1章规定在本附件中提供的关于无用发射特性信息所对应的频率范围和工作频段。
- 第2章规定定义、符号和缩略语。
- 第3章包括在单个TAB连接器上定义的NR基站无用发射特性，和/或在RIB上定义的OTA特性（针对1-C型基站和1-H型基站）。
- 第4章包括适用于1-O型基站和2-O型基站的NR基站无用发射特性。
- 第5章列出参考文献。

本附件中规定的值包含ITU-R M.1545建议书[4]中定义的测试容差。

本附件包含来自转化标准的信息，并在表格和章节中予以说明。

关于本附件中的“类别A”和“类别B”，应参考ITU-R SM.329建议书第3.3节。

## 1 工作频段

在整个射频规范中，无用发射特性在许多情况下是为不同的频率范围（FR）而分别定义的。NR可工作的频率范围如表A2-1所述。

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<sup>6</sup> 由3GPP提案方开发，命名为“5G，版本15及之后 – LTE+NR SRIT”。

<sup>7</sup> 由3GPP提案方开发，命名为“5G，版本15及之后 – NR RIT”。

表A2-1  
NR频率范围

频率范围指定		相应的频率范围*
FR1		410-7 125 MHz
FR2	FR2-1	24 250-52 600 MHz
	FR2-2	52 600-71 000 MHz

\* 这些频率范围内的所有频段并非都被确定用于《无线电规则》中的IMT。

本附件中定义的无用发射特性适用于工作于表A2-2或A2-4中至少一个频段上的NR基站。

表A2-2  
FR1中的NR工作频段  
NR使用并在《无线电规则》中确定用于IMT的频段

NR 工作频段 编号	上行链路 (UL) 工作频段 BS接收/UE发射 $F_{UL,low} - F_{UL,high}$	下行链路 (DL) 工作频段 BS发射/UE接收 $F_{DL,low} - F_{DL,high}$	双工 模式	确定用于不同国家/ 区域中IMT的频段或 其部分的脚注
n1	1 920-1 980 MHz	2 110-2 170 MHz	FDD	<b>5.388</b>
n2	1 850-1 910 MHz	1 930-1 990 MHz	FDD	<b>5.384A、5.388</b>
n3	1 710-1 785 MHz	1 805-1 880 MHz	FDD	<b>5.384A</b>
n5	824-849 MHz	869-894 MHz	FDD	<b>5.317A</b>
n7	2 500-2 570 MHz	2 620-2 690 MHz	FDD	<b>5.384A</b>
n8	880-915 MHz	925-960 MHz	FDD	<b>5.317A</b>
n12	699-716 MHz	729-746 MHz	FDD	<b>5.313A、5.317A</b>
n13	777-787 MHz	746-756 MHz	FDD	<b>5.313A、5.317A</b>
n14	788-798 MHz	758-768 MHz	FDD	<b>5.313A、5.317A</b>
n18	815-830 MHz	860-875 MHz	FDD	<b>5.317A</b>
n20	832-862 MHz	791-821 MHz	FDD	<b>5.317A</b>
n25	1 850-1 915 MHz	1 930-1 995 MHz	FDD	<b>5.384A、5.388</b>
n26	814-849 MHz	859-894 MHz	FDD	<b>5.317A</b>
n28	703-748 MHz	758-803 MHz	FDD	<b>5.313A、5.317A</b>
n29	N/A	717-728 MHz	SDL	<b>5.313A、5.317A</b>
n30	2 305-2 315 MHz	2 350-2 360 MHz	FDD	<b>5.384A</b>
n34	2 010-2 025 MHz	2 010-2 025 MHz	TDD	<b>5.388</b>
n38	2 570-2 620 MHz	2 570-2 620 MHz	TDD	<b>5.384A</b>
n39	1 880-1 920 MHz	1 880-1 920 MHz	TDD	<b>5.384A、5.388</b>
n40	2 300-2 400 MHz	2 300-2 400 MHz	TDD	<b>5.384A</b>

表A2-2 (结束)

NR 工作频段 编号	上行链路 (UL) 工作频段 BS接收/UE发射 $F_{UL,low} - F_{UL,high}$	下行链路 (DL) 工作频段 BS发射/UE接收 $F_{DL,low} - F_{DL,high}$	双工 模式	确定用于不同国家/ 区域中IMT的频段或 其部分的脚注
n48	3 550-3 700 MHz	3 550-3 700 MHz	TDD	5.430A、5.431B、5.433A、 5.433B、5.434、5.434B
n50	1 432-1 517 MHz	1 432-1 517 MHz	TDD	5.341A、5.341B、5.341C、 5.346、5.346A
n51	1 427-1 432 MHz	1 427-1 432 MHz	TDD	5.341A、5.341B、5.341C
n65	1 920-2 010 MHz	2 110-2 200 MHz	FDD	5.388
n66	1 710-1 780 MHz	2 110-2 200 MHz	FDD	5.384A、5.388
n67	N/A	738-758 MHz	SDL	5.313A、5.317A
n71	663-698 MHz	617-652 MHz	FDD	5.296A、5.308A、5.307A
n74	1 427-1 470 MHz	1 475-1 518 MHz	FDD	5.341A、5.341B、5.341C、 5.346、5.346A
n75	N/A	1 432-1 517 MHz	SDL	5.341A、5.341B、5.341C、 5.346、5.346A
n76	N/A	1 427-1 432 MHz	SDL	5.341A、5.341B、5.341C
n80	1 710-1 785 MHz	N/A	SUL	5.384A
n81	880-915 MHz	N/A	SUL	5.317A
n82	832-862 MHz	N/A	SUL	5.317A
n83	703-748 MHz	N/A	SUL	5.313A、5.317A
n84	1 920-1 980 MHz	N/A	SUL	5.388
n85	698-716 MHz	728-746 MHz	FDD	5.313A、5.317A
n86	1 710-1 780 MHz	N/A	SUL	5.384A
n89	824-849 MHz	N/A	SUL	5.317A
n91	832-862 MHz	1 427-1 432 MHz	FDD <sup>(2)</sup>	5.317A、5.341A、5.431B、 5.341C
n92	832-862 MHz	1 432-1 517 MHz	FDD <sup>(2)</sup>	5.317A、5.341A、5.341B、 5.341C、5.346、5.346A
n93	880-915 MHz	1 427-1 432 MHz	FDD <sup>(2)</sup>	5.317A、5.341A、5.431B、 5.341C
n94	880-915 MHz	1 432-1 517 MHz	FDD <sup>(2)</sup>	5.317A、5.341A、5.341B、 5.341C、5.346、5.346A
n95 <sup>(1)</sup>	2 010-2 025 MHz	N/A	SUL	5.388
n97 <sup>(5)</sup>	2 300-2 400 MHz	N/A	SUL	5.384A
n98 <sup>(5)</sup>	1 880-1 920 MHz	N/A	SUL	5.384A、5.388
n101	1 900-1 910 MHz	1 900-1 910 MHz	TDD	5.388
n104 <sup>(8)</sup>	6 425-7 125 MHz	6 425-7 125 MHz	TDD	5.457D、5.457E、5.457F

表A2-3

**FR1中的NR工作频段**  
**NR使用并在《无线电规则》中未确定或**  
**未完全确定用于IMT的频段**

NR 工作频段 编号	上行链路 (UL) 工作频段 BS接收/UE发射 $F_{UL,low} - F_{UL,high}$	下行链路 (DL) 工作频段 BS发射/UE接收 $F_{DL,low} - F_{DL,high}$	双工 模式	确定用于不同国家/ 区域中IMT的频段或 其部分的脚注
n24 <sup>(7)</sup>	1 626.5-1 660.5 MHz	1 525-1 559 MHz	FDD	在《无线电规则》中 未确定用于IMT
n41	2 496-2 690 MHz	2 496-2 690 MHz	TDD	<b>5.384A</b>
n53	2 483.5-2 495 MHz	2 483.5-2 495 MHz	TDD	在《无线电规则》中 未确定用于IMT
n70	1 695-1 710 MHz	1 995-2 020 MHz	FDD	<b>5.388</b>
n77	3 300-4 200 MHz	3 300-4 200 MHz	TDD	<b>5.429B、5.429D、5.429F、 5.430A、5.431B、5.432A、 5.432B、5.433A、5.433B、 5.434、5.434B、5.435B</b>
n78	3 300-3 800 MHz	3 300-3 800 MHz	TDD	<b>5.429B、5.529D、5.429F、 5.430A、5.431B、5.432A、 5.432B、5.433A、5.433B、 5.434、5.434B、5.435B</b>
n79	4 400-5 000 MHz	4 400-5 000 MHz	TDD	<b>5.441A、5.441B</b>
n90	2 496-2 690 MHz	2 496-2 690 MHz	TDD	<b>5.384A</b>
n99 <sup>(6)</sup>	1 626.5-1 660.5 MHz	N/A	SUL	在《无线电规则》中 未确定用于IMT
n102 <sup>(4)</sup>	5 925-6 425 MHz	5925-6 425 MHz	TDD <sup>(3)</sup>	在《无线电规则》中 未确定用于IMT

(1) 空缺

(2) 可变双工操作不支持网络进行动态可变双工配置，其使用方式为：在本频段的任何有效频率范围内，独立支持DL和UL频率范围。

(3) 空缺

(4) 空缺

(5) 有关本频段的要求仅适用于在同一地理区域中、本频段的频率范围内未使用其他NR或E-UTRA TDD工作频段的情况。若在同一地理区域中、本频段的频率范围内使用了其他NR或E-UTRA TDD工作频段，则可能适用特殊的共存要求，而此类要求不在3GPP规范的覆盖范围内。

(6) 空缺

(7) 空缺

表A2-4

**FR2中的NR工作频段**  
NR使用并在《无线电规则》中确定用于IMT的频段

NR工作频段 编号	上行链路 (UL) 和下行链路 (DL) 工作频段 BS发射/接收 UE发射/接收 $F_{UL,low} - F_{UL,high}$ $F_{DL,low} - F_{DL,high}$	双工 模式	确定用于不同国家/ 区域中IMT的频段或 其部分的脚注
n258	24 250-27 500 MHz	TDD	<b>5.532AB</b>
n259	39 500-43 500 MHz	TDD	<b>5.550B</b>
n260	37 000-40 000 MHz	TDD	<b>5.550B</b>
n262	47 200-48 200 MHz	TDD	<b>5.553B</b>

表A2-5

**FR2中的NR工作频段**  
NR使用并在《无线电规则》中未确定或  
未完全确定用于IMT的频段

NR工作频段 编号	上行链路 (UL) 和下行链路 (DL) 工作频段 BS发射/接收 UE发射/接收 $F_{UL,low} - F_{UL,high}$ $F_{DL,low} - F_{DL,high}$	双工 模式	确定用于不同国家/ 区域中IMT的频段或 其部分的脚注
n257	26 500-29 500 MHz	TDD	<b>5.532AB</b>
n261	27 500-28 350 MHz	TDD	在《无线电规则》中 未确定用于IMT
n263	57 000-71 000 MHz	TDD	<b>5.559AA</b>

## 2 定义、符号和缩略约

### 2.1 定义

**基本限值 (basic limit)**：指的是在ITU-R SM.329建议书[3]中规定的、与单个发射机馈送至单根天线传输线的功率有关的发射限值，该限值用于制定FR1频段的无用发射要求。

**天线连接器 (antenna connector)**：指的是1-C型基站的传导接口处的连接器。

**1-C型基站 (BS type 1-C)**：指的是工作于FR1频段的NR基站，其要求集仅包括在单个天线连接器处定义的传导要求。

**1-H型基站 (BS type 1-H)**：指的是工作于FR1频段的NR基站，其要求集包括在单个TAB连接器处定义的传导要求以及在RIB处定义的OTA要求。

**1-O型基站 (BS type 1-O)**：指的是工作于FR1频段的NR基站，其要求集仅包括在RIB处定义的OTA要求。

**2-O型基站 (BS type 2-O)**：指的是工作于FR2频段的NR基站，其要求集仅包括在RIB处定义的OTA要求。

**射频带宽间的间隔 (Inter RF Bandwidth gap)**：指的是位于两个所支持工作频段内的、两个连续基站射频带宽之间的频率间隔。

**NR带内NB-IoT操作 (NB-IoT operation in NR in-band)**：当NB-IoT位于NR传输带宽配置加上每个边缘处15 kHz的范围内、但不位于NR最小保护频段 $GB_{\text{Channel}}$ 范围内时，称NB-IoT工作在带内。

**工作频段 (Operating band)**：指的是NR基站工作的频率范围（成对或非成对），它通过一组特定的技术要求来定义。

注 – 基站的工作频段由制造商根据表1-2和1-3中的指定来声明。

**辐射接口边界 (radiated interface boundary)**：指的是辐射要求适用的、工作频段特定的辐射要求参考面。

注 – 对于基于EIRP的要求，辐射接口边界与远场区域相关联。

**收发机阵列边界连接器 (TAB connector)**：指的是收发机阵列边界连接器。

**TAB连接器RX最小小区组 (TAB connector RX min cell group)**：指的是1-H型基站传导RX要求适用的、工作频段特定的经声明的TAB连接器组。

注 – 在本定义中，当1-H型基站设置对应所声明的最小小区数（支持某工作频段的所有TAB连接器均处于接收状态）时，组对应负责接收一个小区的TAB连接器组，但其存在并不限于该条件。

**TAB连接器TX最小小区组 (TAB connector TX min cell group)**：指的是1-H型基站传导TX要求适用的、工作频段特定的经声明的TAB连接器组。

注 – 在本定义中，当1-H型基站设置对应所声明的最小小区数（支持某工作频段的所有TAB连接器均处于状态）时，组对应负责接收一个小区的TAB连接器组，但其存在并不限于该条件。

**收发机阵列边界 (transceiver array boundary)**：收发机单元阵列与复合天线之间的传导接口。

## 2.2 符号

$BW_{\text{Config}}$	传输带宽配置，单位为MHz，其中 $BW_{\text{Config}} = N_{\text{RB}} \times \text{SCS} \times 12 \text{ kHz}$
$F_{\text{DL\_low}}$	下行链路工作频段的最低频率
$F_{\text{DL\_high}}$	下行链路工作频段的最高频率
$F_{\text{UL\_low}}$	上行链路工作频段的最低频率
$F_{\text{UL\_high}}$	上行链路工作频段的最高频率
$\Delta f_{\text{OBUE}}$	工作频段无用发射掩模相对于下行链路工作频段边缘的最大偏移
$\Delta f_{\text{max}}$	$f_{\text{offset\_max}}$ 减去测量滤波器带宽的一半
$f_{\text{offset\_max}}$	下行链路工作频段外的频段偏移 $\Delta f_{\text{OBUE}}$
$N_{\text{RB}}$	传输带宽配置，以资源块数量的形式来表示

$N_{\text{TXU, counted}}$	根据第3.1节计算的活跃发射机单元的数量，用于第3.1.2节的传导TX输出功率限值以及无用TX发射标度
$N_{\text{TXU, counted per cell}}$	根据第3.1节计算的、用于每个小区传导TX发射标度的活跃发射机单元数量

### 2.3 缩略语

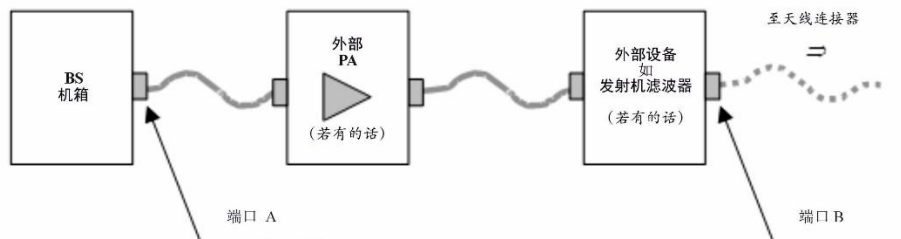
ACLR	相邻信道泄漏比
CA	载波聚合
CACLR	累积ACLR
CLTA	同址并置测试天线
DTT	数字地面电视
EIRP	等效全向辐射功率
FR	频率范围
GPS	全球定位系统
OTA	空口
PHS	个人手持电话系统
RIB	辐射接口边界
SCS	子载波间隔
TAB	收发机阵列边界
TRP	总辐射功率

### 2.4 传导和辐射参考点

制造商可以声明NR基站是以下基站类型之一：

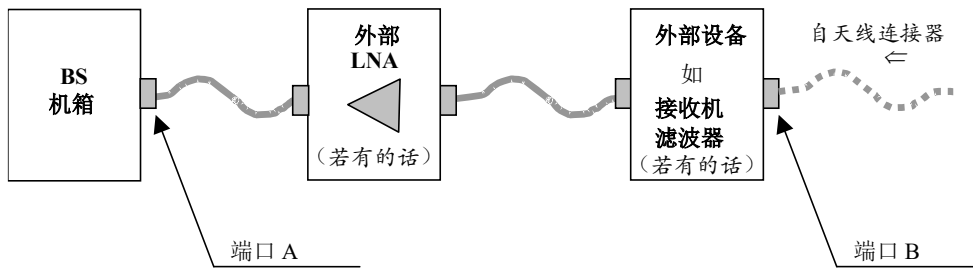
- 1-C型基站：要求适用于基站天线连接器（端口A），用于正常操作条件下配置的单个发射机或接收机以及全套收发机。如果使用任何外部设备，如放大器、滤波器或此类设备的组合，要求适用于远端天线连接器（端口B）。

图A2-1  
1-C型基站发射机接口



图A2-2

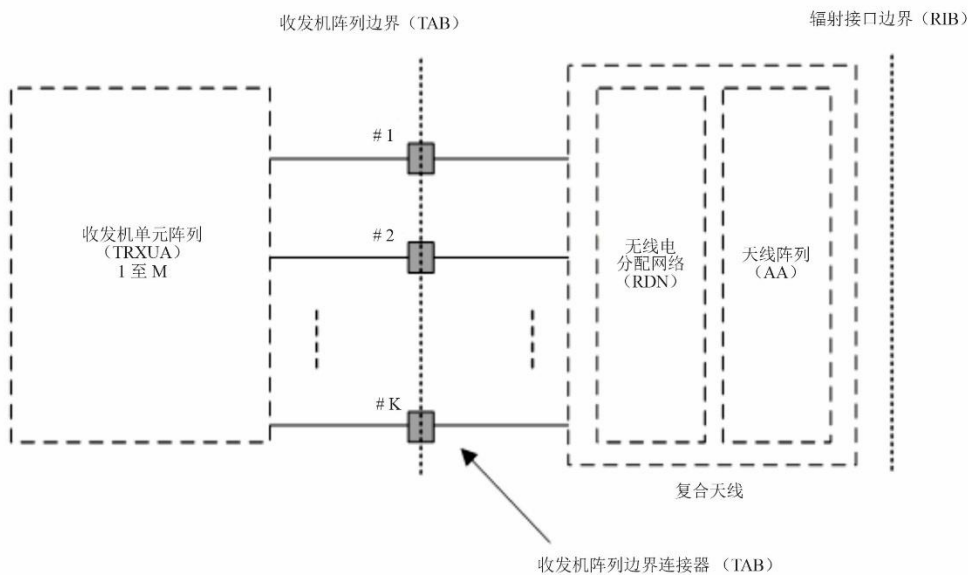
1-C型基站接收机接口



- 1-H型基站：要求为两个参考点而定义，由辐射要求和传导要求来表示。辐射特性是定义空口（OTA），其中工作频段特定的辐射接口指的是辐射接口边界（RIB）。针对每项要求，详细说明了OTA要求适用的（空间）特性。传导特性在收发机阵列边界处的单个或多组TAB连接器处定义，收发机阵列边界是收发机单元阵列与复合天线之间的传导接口。

图A2-3

1-H型基站的辐射和传导参考点



收发机单元阵列是复合收发机功能的一部分，产生调制的发射信号结构并执行接收机组合和解调。

收发机单元阵列包含实施方案特定的数量的发射机单元和实施方案特定的数量的接收机单元。发射机单元和接收机单元可以组合成收发机单元。发射机/接收机单元具有发射/接收并行独立调制符号流的能力。

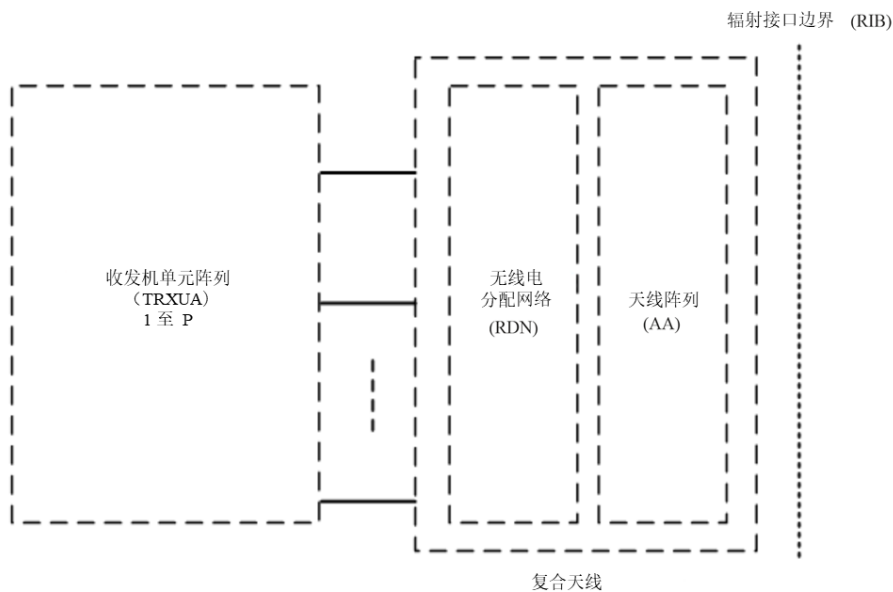
复合天线包含无线电分配网络（RDN）和天线阵列。RDN是一种线性无源网络，它以一种实施方案特定的方式将收发机单元阵列产生的射频功率分配给天线阵列，和/或将天线阵列收集的无线电信号分配给收发机单元阵列。

传导要求如何应用于收发机阵列边界取决于具体要求。

- 1-O型基站：1-O型基站的辐射特性定义空口（OTA），其中工作频段特定的辐射接口指的是辐射接口边界（RIB）。OTA要求适用的（空间）特性取决于具体要求。

图A2-4

1-O型基站和2-O型基站的一般架构



- BS类型2-O：同BS类型1-O，仅在RIB上定义OTA要求。

## 2.5 基站类别

NR的基站类别是广域基站、中程基站和局域基站。

1-C型基站和1-H型基站的基站类别定义如下：

- 广域基站通过源于宏小区场景的特性来表征，其从BS到UE的最小耦合损耗等于70 dB。
- 中程基站通过源于微小区场景的特性来表征，其从BS到UE的最小耦合损耗等于53 dB。
- 局域基站通过源于微微小区场景的特性来表征，其从BS到UE的最小耦合损耗等于45 dB。

1-O型基站和2-O型基站的基站类别定义如下：

- 广域基站通过源于宏小区场景的特性来表征，其从BS到UE的沿地面最小距离等于35米。
- 中程基站通过源于微小区场景的特性来表征，其从BS到UE的沿地面最小距离等于5米。
- 局域基站通过源于微微小区场景的特性来表征，其从BS到UE的沿地面最小距离等于2米。

### 3 1-C型基站和1-H型基站的NR无用发射特性

工作频段无用发射掩模距离工作频段边缘的最大偏移为 $\Delta f_{\text{OBUE}}$ 。工作频段无用发射定义了每个所支持下行链路工作频段加上每个频段以上频率范围 $\Delta f_{\text{OBUE}}$ 和每个频段以下频率范围 $\Delta f_{\text{OBUE}}$ 中的无用发射。该频率范围之外的无用发射通过杂散发射特性来定义。

注 – 频率偏移 $\Delta f_{\text{OBUE}}$ 不定义如ITU-R SM.1541建议书中所述的带外和杂散域之间的边界。因此，在从工作频段边缘到 $\Delta f_{\text{OBUE}}$ 的范围内，本附件中所述的无用发射特性可能仅涵盖部分带外域频率范围。在这种情况下，对于带外域频率范围的剩余部分，应使用杂散发射特性。

对于NR工作频段， $\Delta f_{\text{OBUE}}$ 的值在表A2-6中进行定义。

表A2-6

下行链路工作频段外的OBUE最大偏移

基站类型	工作频段特性	$\Delta f_{\text{OBUE}}$ (MHz)
1-C型基站	$F_{\text{DL\_high}} - F_{\text{DL\_low}} \leq 200 \text{ MHz}$	10
	$200 \text{ MHz} < F_{\text{DL\_high}} - F_{\text{DL\_low}} \leq 900 \text{ MHz}$	40
1-H型基站	$F_{\text{DL\_high}} - F_{\text{DL\_low}} < 100 \text{ MHz}$	10
	$100 \text{ MHz} \leq F_{\text{DL\_high}} - F_{\text{DL\_low}} \leq 900 \text{ MHz}$	40

对于频段n96和n102， $\Delta f_{\text{OBUE}}$ 的值在表A2-7中进行定义。

表A2-7

下行链路工作频段外的OBUE最大偏移

工作频段	$\Delta f_{\text{OBUE}}$ (MHz)
n102	40
n96	50

#### 3.1 传导工作频段无用发射

##### 3.1.1 1-C型基站的传导工作频段无用发射

每个天线连接器的1-C型基站的工作频段无用发射应低于第3.1.3至3.1.8节中定义的适用的基本限值。

##### 3.1.2 1-H型基站的传导工作频段无用发射

1-H型基站的工作频段无用发射指的是针对每个TAB连接器TX最小小区组的无用发射以及第3.1.3至3.1.8节中定义的每个适用的基本限值，TAB连接器TX最小小区组处的功率总和发射不应超过规定为基本限值+X的基站限值，其中， $X = 10 \log_{10}(N_{\text{TXU, countedpercell}})$ ；

$N_{\text{TXU, countedpercell}}$  – 基本限值的标度因子。 $N_{\text{TXU, countedpercell}} = \min(N_{\text{TXU, active}}, 8 \cdot N_{\text{cells}}) / N_{\text{cells}}$ ；

$N_{\text{cells}}$  – 所支持地理小区的最小数量与基站设置有关，支持工作频段的所有TAB连接器上的传输支持小区分裂的最小数量。制造商还应声明TAB连接器TX最小小区组。支持工作频段上传输的每个TAB连接器应映射至一个支持相同工作频段TAB连接器TX最小小区组。TAB连接器至小区的映射依赖于实施方案；

$N_{\text{TXU,active}}$  – 活跃发射机单元的数量，并独立于 $N_{\text{cells}}$ 的声明。

注 – 是否符合1-H型基站发射要求可以通过看是否满足至少一项制造商确定的以下标准来验证：

- 1) 在TAB连接器TX最小小区组中的每个TAB连接器上测得的发射功率之和应小于或等于本节中为相应频率范围而定义的限值。

或者

- 2) 每个TAB连接器上的无用发射功率应小于或等于本节中为相应频率范围而定义的1-H型基站的限值，按 $-10\log_{10}(n)$ 进行标度，其中 $n$ 是TAB连接器TX最小小区组中TAB连接器的数量。

### 3.1.3 广域基站（类别A）的基本限值

对于工作于频段n5、n8、n12、n13、n14、n18、n26、n28、n29、n71、n85的基站，在TS 38.141-1 [1]的表6.6.4.5.2-1中规定了基本限值。

TABLE 6.6.4.5.2-1

**Wide Area BS operating band unwanted emission limits  
(NR bands below 1 GHz) for Category A**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Basic limit (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-5.5 \text{ dBm} - \frac{7}{5} \cdot \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-12.5 dBm	
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-13 dBm (Note 3)	

Note 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -13 dBm/100 kHz.

Note 2: For a *multi-band connector* with Inter RF Bandwidth gap  $< 2 \cdot \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

Note 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

对于工作于频段n1、n2、n3、n7、n24、n25、n30、n34、n38、n39、n40、n41、n50、n65、n66、n70、n74、n75、n92、n94的基站，在TS 38.141-1 [1]的表6.6.4.5.2-2中规定了基本限值。

TABLE 6.6.4.5.2-2 Wide Area BS <i>operating band</i> unwanted emission limits (1 GHz < NR bands ≤ 3 GHz) for Category A			
Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	<i>Basic limit</i> (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-5.5 \text{ dBm} - \frac{7}{5} \cdot \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-12.5 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-13 dBm (Note 3)	1 MHz

Note 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -13 dBm/1 MHz.

Note 2: For a *multi-band connector* with Inter RF Bandwidth gap < 2\* $\Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

Note 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

对于工作于频段n48、n77、n78、n79的基站，在TS 38.141-1 [1]的表6.6.4.5.2-3中规定了基本限值。

TABLE 6.6.4.5.2-3  
**Wide Area BS operating band unwanted emission limits  
 (NR bands > 3 GHz) for Category A**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Basic limit (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-5.2 \text{ dBm} - \frac{7}{5} \cdot \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-12.2 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-13 dBm (Note 3)	1 MHz

Note 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -13 dBm/1 MHz.

Note 2: For a *multi-band connector* with Inter RF Bandwidth gap  $< 2 \cdot \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

Note 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

### 3.1.4 广域基站（类别B）的基本限值

对于类别B工作频段的无用发射，有两个关于基本限值的选项可适用于不同区域。应采用第6.6.4.2.2.1或6.6.4.2.2.2节中的基本限值。

#### 3.1.4.1 类别B要求（选项1）

对于工作于频段n5、n8、n12、n20、n26、n28、n29、n67、n71、n85的基站，在TS 38.141-1 [1]的表6.6.4.5.3.1-1中规定了基本限值。

TABLE 6.6.4.5.3.1-1

**Wide Area BS operating band unwanted emission limits  
(NR bands below 1 GHz) for Category B**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Basic limit (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-5.5 \text{ dBm} - \frac{7}{5} \cdot \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-12.5 dBm	
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-16 dBm (Note 3)	

Note 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -16 dBm/100 kHz.

Note 2: For a *multi-band connector* with Inter RF Bandwidth gap  $< 2 \cdot \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

Note 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

对于工作于频段n1、n2、n3、n7、n25、n34、n38、n39、n40、n41、n50、n65、n66、n70、n75、n92、n94的基站，在TS 38.141-1 [1]的表6.6.4.5.3.1-2中规定了基本限值。

TABLE 6.6.4.5.3.1-2

**Wide Area BS operating band unwanted emission limits  
(1 GHz < NR bands  $\leq$  3 GHz) for Category B**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Basic limit (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-5.5 \text{ dBm} - \frac{7}{5} \cdot \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-12.5 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-15 dBm (Note 3)	1 MHz

Note 1: For a BS supporting non-contiguous spectrum operation within any operating band, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is  $\Delta f \geq 10$  MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be  $-15$  dBm/1 MHz.

Note 2: For a multi-band connector with Inter RF Bandwidth gap  $< 2 \cdot \Delta f_{OBUE}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

Note 3: The requirement is not applicable when  $\Delta f_{max} < 10$  MHz.

对于工作于频段n48、n77、n78、n79的基站，在TS 38.141-1 [1]的表6.6.4.5.3.1-3中规定了基本限值。

TABLE 6.6.4.5.3.1-3

**Wide Area BS operating band unwanted emission limits  
(NR bands >3 GHz) for Category B**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{offset}$	Basic limit (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{offset} < 5.05 \text{ MHz}$	$-5.2 \text{ dBm} - \frac{7}{5} \cdot \left( \frac{f_{offset}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{max})$	$5.05 \text{ MHz} \leq f_{offset} < \min(10.05 \text{ MHz}, f_{offset_{max}})$	$-12.2 \text{ dBm}$	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{max}$	$10.5 \text{ MHz} \leq f_{offset} < f_{offset_{max}}$	$-15 \text{ dBm}$ (Note 3)	1 MHz

Note 1: For a BS supporting non-contiguous spectrum operation within any operating band, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is  $\Delta f \geq 10$  MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be  $-15$  dBm/1 MHz.

Note 2: For a multi-band connector with Inter RF Bandwidth gap  $< 2 \cdot \Delta f_{OBUE}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

Note 3: The requirement is not applicable when  $\Delta f_{max} < 10$  MHz.

### 3.1.4.2 类别B要求（选项2）

对于工作于频段n1、n3、n8、n65的基站或者工作于n7、n38或n101的1-C型基站，在TS 38.141-1 [1]的表6.6.4.5.3.2-1中规定了基本限值。

TABLE 6.6.4.5.3.2-1

**Regional Wide Area BS operating band unwanted emission limits for Category B**

Frequency offset of measurement filter -3dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Basic limit (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 0.2 \text{ MHz}$	$0.015 \text{ MHz} \leq f_{\text{offset}} < 0.215 \text{ MHz}$	-12.5 dBm	30 kHz
$0.2 \text{ MHz} \leq \Delta f < 1 \text{ MHz}$	$0.215 \text{ MHz} \leq f_{\text{offset}} < 1.015 \text{ MHz}$	$-12.5 \text{ dBm} - 15 \cdot \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.215 \right) \text{ dB}$	30 kHz
(Note 4)	$1.015 \text{ MHz} \leq f_{\text{offset}} < 1.5 \text{ MHz}$	-24.5 dBm	30 kHz
$1 \text{ MHz} \leq \Delta f \leq \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$1.5 \text{ MHz} \leq f_{\text{offset}} < \min(10.5 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-11.5 dBm	1 MHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-15 dBm (Note 3)	1 MHz

Note 1: For a BS supporting non-contiguous spectrum operation within any operating band, the minimum requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the minimum requirement within sub-block gaps shall be  $-15 \text{ dBm}/1 \text{ MHz}$ .

Note 2: For a multi-band connector with Inter RF Bandwidth gap  $< 2 \cdot \Delta f_{\text{OBUE}}$  the minimum requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

Note 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

Note 4: This frequency range ensures that the range of values of  $f_{\text{offset}}$  is continuous.

### 3.1.5 中程基站（类别A和类别B）的基本限值

对于NR频段  $\leq 3 \text{ GHz}$  的中程基站，在TS 38.141-1 [1]的表6.6.4.5.4-1和6.6.4.5.4-2中规定了基本限值。

TABLE 6.6.4.5.4-1

**Medium Range BS *operating band* unwanted emission limits,  $31 < P_{\text{rated},x} \leq 38$  dBm (NR bands  $\leq 3$  GHz)**

Frequency offset of measurement filter $-3$ dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	<i>Basic limit</i> (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$P_{\text{rated},x} - 51.5 \text{ dB} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offsetmax}})$	$P_{\text{rated},x} - 58.5 \text{ dB}$	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offsetmax}}$	$\text{Min}(P_{\text{rated},x} - 60 \text{ dB}, -25 \text{ dBm})$ (Note 3)	100 kHz

Note 1: For a BS supporting non-contiguous spectrum operation within any operating band the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10$  MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be  $\text{Min}(P_{\text{rated},x} - 60 \text{ dB}, -25 \text{ dBm})/100 \text{ kHz}$ .

Note 2: For a multi-band connector with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

Note 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

TABLE 6.6.4.5.4-2  
**Medium Range BS operating band unwanted emission limits,**  
 **$P_{\text{rated},x} \leq 31 \text{ dBm}$  (NR bands  $\leq 3 \text{ GHz}$ )**

Frequency offset of measurement filter $-3 \text{ dB}$ point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Basic limit (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-20.5 \text{ dBm} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	$-27.5 \text{ dBm}$	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	$-29 \text{ dBm}$ (Note 3)	100 kHz

Note 1: For a BS supporting non-contiguous spectrum operation within any operating band the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be  $-29 \text{ dBm}/100 \text{ kHz}$ .

Note 2: For a multi-band connector with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

Note 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

对于NR频段  $> 3 \text{ GHz}$ 的中程基站，在TS 38.141-1 [1]的表6.6.4.5.4-3和6.6.4.5.4-4中规定了基本限值。

TABLE 6.6.4.5.4-3

**Medium Range BS operating band unwanted emission limits,  
31 < P<sub>rated,x</sub> ≤ 38 dBm (NR bands >3 GHz)**

<b>Frequency offset of measurement filter -3 dB point, Δf</b>	<b>Frequency offset of measurement filter centre frequency, f<sub>offset</sub></b>	<b>Basic limit (Note 1, 2)</b>	<b>Measurement bandwidth</b>
0 MHz ≤ Δf < 5 MHz	0.05 MHz ≤ f <sub>offset</sub> < 5.05 MHz	$P_{rated,x} - 51.2dB - \frac{7}{5} \left( \frac{f_{offset}}{MHz} - 0.05 \right) dB$	100 kHz
5 MHz ≤ Δf < min(10 MHz, Δf <sub>max</sub> )	5.05 MHz ≤ f <sub>offset</sub> < min(10.05 MHz, f <sub>offset_max</sub> )	P <sub>rated,x</sub> - 58.2 dB	100 kHz
10 MHz ≤ Δf ≤ Δf <sub>max</sub>	10.05 MHz ≤ f <sub>offset</sub> < f <sub>offset_max</sub>	Min(P <sub>rated,x</sub> - 60 dB, -25 dBm) (Note 3)	100 kHz

Note 1: For a BS supporting non-contiguous spectrum operation within any operating band the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is Δf ≥ 10 MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be Min(P<sub>rated,x</sub> - 60 dB, -25 dBm)/100 kHz.

Note 2: For a multi-band connector with Inter RF Bandwidth gap < 2\*Δf<sub>OBUE</sub> the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

Note 3: The requirement is not applicable when Δf<sub>max</sub> < 10 MHz.

TABLE 6.6.4.5.4-4

**Medium Range BS operating band unwanted emission limits,  $P_{\text{rated},x} \leq 31$  dBm (NR bands  $>3$  GHz)**

Frequency offset of measurement filter $-3$ dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Basic limit (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-20.2 \text{ dBm} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	$-27.2 \text{ dBm}$	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	$-29 \text{ dBm}$ (Note 3)	100 kHz

Note 1: For a BS supporting non-contiguous spectrum operation within any operating band the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10$  MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be  $-29$  dBm/100 kHz.

Note 2: For a multi-band connector with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

Note 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10$  MHz.

### 3.1.6 局域基站（类别A和类别B）的基本限值

对于NR频段  $\leq 3$  GHz的局域基站，在TS 38.141-1 [1]的表6.6.4.5.5-1中规定了基本限值。

TABLE 6.6.4.5.5-1

Local Area BS operating band unwanted emission limits (NR bands  $\leq 3$  GHz)

Frequency offset of measurement filter $-3$ dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Basic limit (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-28.5 \text{ dBm} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	$-35.5 \text{ dBm}$	
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	$-37 \text{ dBm}$ (Note 3)	

Note 1: For a BS supporting non-contiguous spectrum operation within any operating band the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10$  MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be  $-37$  dBm/100 kHz.

Note 2: For a multi-band connector with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap

Note 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10$  MHz.

对于NR频段  $> 3$  GHz的局域基站，在TS 38.141-1 [1]的表6.6.4.5.5-1中规定了基本限值。

TABLE 6.6.4.5.5-1

## Local Area BS operating band unwanted emission limits (NR bands &gt;3 GHz)

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Basic limit (Note 1, 2)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-28.2 \text{ dBm} - \frac{7}{5} \cdot \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-35.2 dBm	
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-37 dBm (Note 3)	

Note 1: For a BS supporting non-contiguous spectrum operation within any operating band the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -37 dBm/100 kHz.

Note 2: For a multi-band connector with Inter RF Bandwidth gap  $< 2 \cdot \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

Note 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

### 3.1.7 工作于频段n96和n102的局域基站和中程基站（类别A和类别B）的基本限值

对于工作于频段n96和n102的局域基站和中程基站，在TS 38.141-1 [1]的表6.6.4.5.5A-2中规定了20 MHz、40 MHz、60 MHz和80 MHz信道带宽的基本限值。在TS 38.141-1 [1]的表6.6.4.5.5A-3中为一个非发射信道规定了基本限值。在TS 38.141-1 [1]的表6.6.4.5.5A-4中为两个非发射信道规定了基本限值。

在发射信道之间有一个或两个非发射20 MHz信道的情况下，当指配了60 MHz或80 MHz的NR-U信道带宽时，在TS 38.141-1 [1]的表6.6.4.5.5A-3和6.6.4.5.5A-4中规定的非发射信道的频谱发射掩模分别适用于一个和两个非发射信道。对于发射信道之间的非发射信道，任何基站发射的相对功率不应超过TS 38.141-1 [1]表6.6.4.5.5A-2和6.6.4.5.5A-3给出的最严格电平。

TABLE 6.6.4.5.5A-2

**Medium Range BS and Local Area BS operating band unwanted emission limits for 20 MHz, 40 MHz, 60 MHz and 80 MHz channel bandwidth for band n96 and n102**

Frequency offset of measurement filter -3dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Basic limits (Note 1)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 1 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 1.05 \text{ MHz}$	$\text{Max}(P_{\text{rated},x} - 10 \log_{10} \left( \frac{BW_{\text{channel}}}{100 \text{ kHz}} \right) - 20 \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) + 2.2 \text{ dB}, -40 \text{ dBm})$	100 kHz
$1 \text{ MHz} \leq \Delta f < \min(0.5N \text{ MHz}, \Delta f_{\text{max}})$	$1.05 \text{ MHz} \leq f_{\text{offset}} < \min((0.5N+0.05) \text{ MHz}, f_{\text{offset}_{\text{max}}})$	$\text{Max}(P_{\text{rated},x} - 10 \log_{10} \left( \frac{BW_{\text{channel}}}{100 \text{ kHz}} \right) - 17.8 - \frac{8}{0.5N - 1} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 1.05 \right) \text{ dB}, -40 \text{ dBm})$	100 kHz
$0.5N \text{ MHz} \leq \Delta f < \min(N \text{ MHz}, \Delta f_{\text{max}})$	$(0.5N+0.05) \text{ MHz} \leq f_{\text{offset}} < \min((N+0.05) \text{ MHz}, f_{\text{offset}_{\text{max}}})$	$\text{Max}(P_{\text{rated},x} - 10 \log_{10} \left( \frac{BW_{\text{channel}}}{100 \text{ kHz}} \right) - 25.8 - \frac{12}{0.5N} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.5N - 0.05 \right) \text{ dB}, -40 \text{ dBm})$	100 kHz
$0 \text{ MHz} \leq \Delta f < 1 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 1.05 \text{ MHz}$	$\text{Max}(P_{\text{rated},x} - 10 \log_{10} \left( \frac{BW_{\text{channel}}}{100 \text{ kHz}} \right) - 20 \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) + 2.2 \text{ dB}, -40 \text{ dBm})$	100 kHz
$8.5N \text{ MHz} \leq \Delta f < \min(10.3N \text{ MHz}, \Delta f_{\text{max}})$	$(8.5N+0.05) \text{ MHz} \leq f_{\text{offset}} < \min((10.3N+0.05) \text{ MHz}, f_{\text{offset}_{\text{max}}})$	$\text{Max} \left( P_{\text{rated},x} - 10 \log_{10} \left( \frac{BW_{\text{channel}}}{100 \text{ kHz}} \right) - 39.8 \text{ dB}, -40 \text{ dBm} \right)$	100 kHz
$10.3N \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$(10.3N+0.05) \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	$\text{Max} \left( P_{\text{rated},x} - 10 \log_{10} \left( \frac{BW_{\text{channel}}}{100 \text{ kHz}} \right) - 44.8 \text{ dB}, -40 \text{ dBm} \right)$	100 kHz

Note 1: For a BS supporting non-contiguous spectrum operation within any operating band, the minimum requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq N$  MHz from both adjacent sub blocks on each side of the sub-block gap, where the minimum requirement within sub-block gaps shall be  $\text{Max} \left( P_{\text{rated},x} - 10 \log_{10} \left( \frac{BW_{\text{channel}}}{100 \text{ kHz}} \right) - 37.8 \text{ dB}, -40 \text{ dBm} \right)$ .

TABLE 6.6.4.5.5A-3

**Medium Range BS operating band unwanted emission limits for one non-transmitted channel for 60 MHz and 80MHz channel bandwidth for band n96 and n102**

Frequency offset of measurement filter -3dB point, $\Delta f_{BE\_offset}$	Frequency offset of measurement filter centre frequency, $f_{BE\_offset}$	Basic limits	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f_{BE\_offset} < 1 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{BE\_offset} < 1.05 \text{ MHz}$	$P_{rated,x} - 10 \log_{10} \left( \frac{BW_{Channel}}{100 \text{ kHz}} \right) - 20 \left( \frac{f_{BE\_offset}}{\text{MHz}} - 0.05 \right) + 2.2 \text{ dB}$	100 kHz
$1 \text{ MHz} \leq \Delta f_{BE\_offset} < 10 \text{ MHz}$	$1.05 \text{ MHz} \leq f_{BE\_offset} < 10.05 \text{ MHz}$	$P_{rated,x} - 10 \log_{10} \left( \frac{BW_{Channel}}{100 \text{ kHz}} \right) - 17.8 - \frac{1}{3} \left( \frac{f_{BE\_offset}}{\text{MHz}} - 1.05 \right) \text{ dB}$	100 kHz
$10 \text{ MHz} \leq \Delta f_{BE\_offset} < 19 \text{ MHz}$	$10.05 \text{ MHz} \leq f_{BE\_offset} < 19.05 \text{ MHz}$	$P_{rated,x} - 10 \log_{10} \left( \frac{BW_{Channel}}{100 \text{ kHz}} \right) - 20.8 + \frac{1}{3} \left( \frac{f_{BE\_offset}}{\text{MHz}} - 10.05 \right) \text{ dB}$	100 kHz
$19 \text{ MHz} \leq \Delta f_{BE\_offset} < 19.9 \text{ MHz}$	$19.05 \text{ MHz} \leq f_{BE\_offset} < 19.95 \text{ MHz}$	$P_{rated,x} - 10 \log_{10} \left( \frac{BW_{Channel}}{100 \text{ kHz}} \right) - 17.8 + 20 \left( \frac{f_{BE\_offset}}{\text{MHz}} - 19.05 \right) \text{ dB}$	100 kHz

TABLE 6.6.4.5.5A-4

**Medium Range BS and Local Area BS operating band unwanted emission limits for two non-transmitted channels of 80 MHz channel bandwidth for band n96 and n102**

Frequency offset of measurement filter -3dB point, $\Delta f_{BE\_offset}$	Frequency offset of measurement filter centre frequency, $f_{BE\_offset}$	Basic limits	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f_{BE\_offset} < 1 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{BE\_offset} < 1.05 \text{ MHz}$	$P_{rated,x} - 10 \log_{10} \left( \frac{BW_{Channel}}{100 \text{ kHz}} \right) - 20 \left( \frac{f_{BE\_offset}}{\text{MHz}} - 0.05 \right) + 2.2 \text{ dB}$	100 kHz
$1 \text{ MHz} \leq \Delta f_{BE\_offset} < 10 \text{ MHz}$	$1.05 \text{ MHz} \leq f_{BE\_offset} < 10.05 \text{ MHz}$	$P_{rated,x} - 10 \log_{10} \left( \frac{BW_{Channel}}{100 \text{ kHz}} \right) - 17.8 - \frac{5}{9} \left( \frac{f_{BE\_offset}}{\text{MHz}} - 1.05 \right) \text{ dB}$	100 kHz
$10 \text{ MHz} \leq \Delta f_{BE\_offset} < 30 \text{ MHz}$	$10.05 \text{ MHz} \leq f_{BE\_offset} < 30.05 \text{ MHz}$	$P_{rated,x} - 10 \log_{10} \left( \frac{BW_{Channel}}{100 \text{ kHz}} \right) - 22.8$	100 kHz
$30 \text{ MHz} \leq \Delta f_{BE\_offset} < 39 \text{ MHz}$	$30.05 \text{ MHz} \leq f_{BE\_offset} < 39.05 \text{ MHz}$	$P_{rated,x} - 10 \log_{10} \left( \frac{BW_{Channel}}{100 \text{ kHz}} \right) - 22.8 + \frac{5}{9} \left( \frac{f_{BE\_offset}}{\text{MHz}} - 30.05 \right) \text{ dB}$	100 kHz
$39 \text{ MHz} \leq \Delta f_{BE\_offset} < 39.9 \text{ MHz}$	$39.05 \text{ MHz} \leq f_{BE\_offset} < 39.95 \text{ MHz}$	$P_{rated,x} - 10 \log_{10} \left( \frac{BW_{Channel}}{100 \text{ kHz}} \right) - 17.8 + 20 \left( \frac{f_{BE\_offset}}{\text{MHz}} - 39.05 \right) \text{ dB}$	100 kHz

### 3.1.8 附加要求的基本限值

在某些区域，以下附加要求可能适用：

- 保护DTT，要求见TS 38.141-1 [1]第6.6.4.5.6.2节。
- 频段n48中的操作，要求见TS 38.141-1 [1]第6.6.4.5.6.3节。
- 频段n53中的操作，要求见TS 38.141-1 [1]第6.6.4.5.6.4节。
- 保护GPS，要求见TS 38.141-1 [1]第6.6.4.5.6.5节。
- 带有共享频谱信道接入的操作，要求见TS 38.141-1 [1]第6.6.4.5.6.6节。

#### 6.6.4.5.6.2 Protection of DTT

In certain regions the following requirement may apply for protection of DTT. For *BS type I-C* or *BS type I-H* operating in Band n20, the level of emissions in the band 470-790 MHz, measured in an 8 MHz filter bandwidth on centre frequencies  $F_{\text{filter}}$  according to Table 6.6.4.5.6.2-1, *basic limit* is  $P_{\text{EM},N}$  declared by the manufacturer. This requirement applies in the frequency range 470-790 MHz even though part of the range falls in the spurious domain.

**Table 6.6.4.5.6.2-1: Declared emissions *basic limit* for protection of DTT**

Filter centre frequency, $F_{\text{filter}}$	Measurement bandwidth	Declared emission <i>basic limit</i> (dBm)
$F_{\text{filter}} = 8*N + 306$ (MHz); $21 \leq N \leq 60$	8 MHz	$P_{\text{EM},N}$

Note: The regional requirement is defined in terms of EIRP (effective isotropic radiated power), which is dependent on both the BS emissions at the *antenna connector* and the deployment (including antenna gain and feeder loss). The requirement defined above provides the characteristics of the BS needed to verify compliance with the regional requirement. Compliance with the regional requirement can be determined using the method outlined in TS 36.104 [22], Annex G.

#### 6.6.4.5.6.3 Additional operating band unwanted emissions limits for Band n48

The following requirement may apply to BS operating in Band n48 in certain regions. Emissions shall not exceed the maximum levels specified in Table 6.6.4.5.6.3-1.

**Table 6.6.4.5.6.3-1: Additional operating band unwanted emission limits for Band n48**

Channel bandwidth	Frequency offset of measurement filter -3dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Minimum requirement	Measurement bandwidth (Note)
All	$0 \text{ MHz} \leq \Delta f < 10 \text{ MHz}$	$0.5 \text{ MHz} \leq f_{\text{offset}} < 9.5 \text{ MHz}$	-13 dBm	1 MHz

NOTE: The resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. However, to improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth may be smaller than the measurement bandwidth. When the resolution bandwidth is smaller than the measurement bandwidth, the result should be integrated over the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.

#### 6.6.4.5.6.4 Additional operating band unwanted emissions limits for Band n53

The following requirement may apply to BS operating in Band n53 in certain regions. Emissions shall not exceed the maximum levels specified in Table 6.6.4.5.6.4-1.

**Table 6.6.4.5.6.4-1: Additional operating band unwanted emission limits for Band n53**

Channel bandwidth (MHz)	Frequency range (MHz)	Frequency offset of measurement filter -3dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Minimum requirement	Measurement bandwidth (Note)
5	2 400-2 477.5	$6 \text{ MHz} \leq \Delta f < 83.5 \text{ MHz}$	$6.5 \text{ MHz} \leq f_{\text{offset}} < 83 \text{ MHz}$	-25 dBm	1 MHz
10	2 400-2 473.5	$10 \text{ MHz} \leq \Delta f < 83.5 \text{ MHz}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < 83 \text{ MHz}$	-25 dBm	1 MHz
5	2 477.5-2 478.5	$5 \text{ MHz} \leq \Delta f < 6 \text{ MHz}$	5.5 MHz	-13 dBm	1 MHz
10	2 473.5-2 478.5	$5 \text{ MHz} \leq \Delta f < 10 \text{ MHz}$	$5.5 \text{ MHz} \leq f_{\text{offset}} < 9.5 \text{ MHz}$	-13 dBm	1 MHz
All	2 478.5-2 483.5	$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.5 \text{ MHz} \leq f_{\text{offset}} < 4.5 \text{ MHz}$	-10 dBm	1 MHz
5	2 495-2 501	$0 \text{ MHz} \leq \Delta f < 6 \text{ MHz}$	$0.5 \text{ MHz} \leq f_{\text{offset}} < 5.5 \text{ MHz}$	-13 dBm	1 MHz
10	2 495-2 505	$0 \text{ MHz} \leq \Delta f < 10 \text{ MHz}$	$0.5 \text{ MHz} \leq f_{\text{offset}} < 9.5 \text{ MHz}$	-13 dBm	1 MHz

5	2 501-2 690	$6 \text{ MHz} \leq \Delta f < 195 \text{ MHz}$	$6.5 \text{ MHz} \leq f_{\text{offset}} < 194.5 \text{ MHz}$	-25 dBm	1 MHz
10	2 505-2 690	$10 \text{ MHz} \leq \Delta f < 195 \text{ MHz}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < 194.5 \text{ MHz}$	-25 dBm	1 MHz

NOTE: The resolution bandwidth of the measuring equipment should be equal to the *measurement bandwidth*. However, to improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth may be smaller than the *measurement bandwidth*. When the resolution bandwidth is smaller than the *measurement bandwidth*, the result should be integrated over the *measurement bandwidth* in order to obtain the equivalent noise bandwidth of the *measurement bandwidth*.

#### 6.6.4.5.6.5 Protection of GPS

The level of emissions in the 1 541-1 650 MHz band, measured in measurement bandwidth according to Table 6.6.4.5.6.5-1 shall not exceed the *basic limits*  $P_{EM\_B24,a}$ ,  $P_{EM\_B24,b}$ ,  $P_{EM\_B24,c}$ ,  $P_{EM\_B24,d}$ ,  $P_{EM\_B24,e}$ , and  $P_{EM\_B24,f}$  declared by the manufacturer.

**Table 6.6.4.5.6.5-1: Declared emissions *basic limits* for protection of GPS**

Operating Band	Frequency range (MHz)	Declared emission level (dBW) (Measurement bandwidth = 1 MHz)	Declared emission <i>basic limit</i> (dBW) of discrete emissions of less than 700 Hz bandwidth (Measurement bandwidth = 1 kHz)	Declared emission <i>basic limit</i> (dBW) of discrete emissions of less than 2 kHz bandwidth (Measurement bandwidth = 1 kHz)
n24	1 541-1 559	$P_{EM\_B24,a}$		$P_{EM\_B24,f}$
	1 559-1 610	$P_{EM\_B24,b}$	$P_{EM\_B24,d}$	
	1 610-1 650	$P_{EM\_B24,c}$	$P_{EM\_B24,e}$	

#### 6.6.4.5.6.6 Additional operating band unwanted emissions limits for operation with shared spectrum channel access

In addition, for operation with shared spectrum channel access, the BS may have to comply with the applicable operating band unwanted emission limits established regionally, when deployed in regions where those limits apply and under the conditions declared by the manufacturer. The regional requirements may be in the form of conducted power, power spectral density, EIRP and other types of limits. In case of regulatory limits based on EIRP, assessment of the EIRP level is described in Annex F.2.

## 3.2 传导相邻信道泄漏比 (ACLR)

### 3.2.1 一般性要求

相邻信道泄漏功率比 (ACLR) 指的是以所指派信道频率为中心的滤波后平均功率与以相邻信道频率为中心的滤波后平均功率之比。

在TS 38.141-1 [1]表6.6.3.5.2-1、6.6.3.5.2-1a、6.6.3.5.2-3和6.6.3.5.2-3a中定义了相邻信道频率的假设滤波器，以及一个带宽等于以所指派信道频率为中心的发射信号传输带宽配置 ( $BW_{\text{Config}}$ ) 的矩形滤波器。

**Table 6.6.3.5.2-1: Base station ACLR limit**

<i>BS channel bandwidth of lowest/highest NR carrier transmitted</i> $BW_{Channel}$ (MHz)	<i>BS adjacent channel centre frequency offset below the lowest or above the highest carrier centre frequency transmitted</i>	<i>Assumed adjacent channel carrier (informative)</i>	<i>Filter on the adjacent channel frequency and corresponding filter bandwidth</i>	<i>ACLR limit</i>
5, 10, 15, 20	$BW_{Channel}$	NR of same BW (Note 2)	Square ( $BW_{Config}$ )	44.2 dB
	$2 \times BW_{Channel}$	NR of same BW (Note 2)	Square ( $BW_{Config}$ )	44.2 dB
	$BW_{Channel}/2 + 2.5$ MHz	5 MHz E-UTRA	Square (4.5 MHz)	44.2 dB (NOTE 3)
	$BW_{Channel}/2 + 7.5$ MHz	5 MHz E-UTRA	Square (4.5 MHz)	44.2 dB (NOTE 3)
25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	$BW_{Channel}$	NR of same BW (Note 2)	Square ( $BW_{Config}$ )	43.8 dB
	$2 \times BW_{Channel}$	NR of same BW (Note 2)	Square ( $BW_{Config}$ )	43.8 dB
	$BW_{Channel}/2 + 2.5$ MHz	5 MHz E-UTRA	Square (4.5 MHz)	43.8 dB (NOTE 3)
	$BW_{Channel}/2 + 7.5$ MHz	5 MHz E-UTRA	Square (4.5 MHz)	43.8 dB (NOTE 3)

Note 1:  $BW_{Channel}$  and  $BW_{Config}$  are the *BS channel bandwidth* and transmission bandwidth configuration of the lowest/highest NR carrier transmitted on the assigned channel frequency.

Note 2: With SCS that provides largest transmission bandwidth configuration ( $BW_{Config}$ ).

Note 3: The requirements are applicable when the band is also defined for E-UTRA or UTRA.

**Table 6.6.3.5.2-1a: Base station ACLR limit for band n96 and n102**

<i>BS channel bandwidth of lowest/highest NR carrier transmitted</i> $BW_{Channel}$ (MHz)	<i>BS adjacent channel centre frequency offset below the lowest or above the highest carrier centre frequency transmitted</i>	<i>Assumed adjacent channel carrier (informative)</i>	<i>Filter on the adjacent channel frequency and corresponding filter bandwidth</i>	<i>ACLR limit</i>
10, 20, 40, 60, 80	$BW_{Channel}$	NR of same BW (Note 2)	Square ( $BW_{Config}$ )	35 dB
	$2 \times BW_{Channel}$	NR of same BW (Note 2)	Square ( $BW_{Config}$ )	40 dB

Note 1:  $BW_{Channel}$  and  $BW_{Config}$  are the *BS channel bandwidth* and transmission bandwidth configuration of the lowest/highest NR carrier transmitted on the assigned channel frequency.

Note 2: With SCS that provides largest transmission bandwidth configuration ( $BW_{Config}$ ).

**Table 6.6.3.5.2-3: Base Station ACLR limit in non-contiguous spectrum or multiple bands**

<i>BS channel bandwidth of lowest/highest NR carrier transmitted</i> $BW_{Channel}$ (MHz)	<i>Sub-block or Inter RF Bandwidth gap size (<math>W_{gap}</math>) where the limit applies (MHz)</i>	<i>BS adjacent channel centre frequency offset below or above the sub-block or Base Station RF Bandwidth edge (inside the gap)</i>	<i>Assumed adjacent channel carrier</i>	<i>Filter on the adjacent channel frequency and corresponding filter bandwidth</i>	<i>ACLR limit</i>
5, 10, 15, 20	$W_{gap} \geq 15$ (Note 3)	2.5 MHz	5 MHz NR (Note 2)	Square ( $BW_{Config}$ )	44.2 dB
	$W_{gap} \geq 45$ (Note 4)				
	$W_{gap} \geq 20$ (Note 3)	7.5 MHz	5 MHz NR (Note 2)		
	$W_{gap} \geq 50$ (Note 4)				

25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	$W_{\text{gap}} \geq 60$ (Note 4)	10 MHz	20 MHz NR (Note 2)	Square ( $BW_{\text{Config}}$ )	43.8 dB
	$W_{\text{gap}} \geq 30$ (Note 3)				
	$W_{\text{gap}} \geq 80$ (Note 4)	30 MHz	20 MHz NR (Note 2)		
	$W_{\text{gap}} \geq 50$ (Note 3)				

Note 1:  $BW_{\text{Config}}$  is the transmission bandwidth configuration of the assumed adjacent channel carrier.  
Note 2: With SCS that provides largest transmission bandwidth configuration ( $BW_{\text{Config}}$ ).  
Note 3: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 5, 10, 15, 20 MHz.  
Note 4: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 MHz.

**Table 6.6.3.5.2-3a: Base Station ACLR limit in non-contiguous spectrum for band n96 and n102**

<i>BS channel bandwidth of lowest/highest NR carrier transmitted</i> $BW_{\text{Channel}}$ (MHz)	Sub-block or Inter RF Bandwidth gap size ( $W_{\text{gap}}$ ) where the limit applies (MHz)	BS adjacent channel centre frequency offset below or above the sub-block or Base Station RF Bandwidth edge (inside the gap)	Assumed adjacent channel carrier	Filter on the adjacent channel frequency and corresponding filter bandwidth	ACLR limit
10, 20, 40, 60, 80	$W_{\text{gap}} \geq 60$	10 MHz	20 MHz NR (Note 2)	Square ( $BW_{\text{Config}}$ )	35 dB
	$W_{\text{gap}} \geq 80$	30 MHz	20 MHz NR (Note 2)	Square ( $BW_{\text{Config}}$ )	40 dB

Note 1:  $BW_{\text{Config}}$  is the transmission bandwidth configuration of the assumed adjacent channel carrier.  
Note 2: With SCS that provides largest transmission bandwidth configuration ( $BW_{\text{Config}}$ ).

### 3.2.2 限值和基本限值

对于频段n96和n102除外的成对和非成对频谱中的操作，ACLR应高于TS 38.141-1 [1]表6.6.3.5.2-1中规定的值。

对于频段n96和n102除外的非连续频谱或多个频段中的操作，ACLR应高于TS 38.141-1 [1]表6.7.3.5.2-3中规定的值。

对于频段n96和n102，ACLR应高于TS 38.141-1 [1]表6.7.3.5.2-1a中规定的值。

在TS 38.141-1 [1]表6.6.3.5.2-2中规定了ACLR绝对基本限值。

**Table 6.6.3.5.2-2: Base station ACLR absolute *basic limit***

BS category / BS class	ACLR absolute <i>basic limit</i>
Category A Wide Area BS	-13 dBm/MHz
Category B Wide Area BS	-15 dBm/MHz
Medium Range BS	-25 dBm/MHz
Local Area BS	-32 dBm/MHz

### 3.2.3 1-C型基站

对于频段n96和n102除外的成对和非成对频谱中的操作，1-C型基站的ACLR测试要求在TS 38.141-1 [1]表6.6.3.5.2-1或6.6.3.5.2-3中给出，适用于每个天线连接器。是否符合一致性要求可以通过看是否满足TS 38.141-1 [1]表6.6.3.5.2-1或6.6.3.5.2-3中的ACLR限值或者TS 38.141-1 [1]表6.6.3.5.2-2中的绝对基本限值来验证，以较不严格者为准。

对于频段n96和n102上的操作，1-C型基站的ACLR测试要求在TS 38.141-1 [1]表6.6.3.5.2-1a或6.6.3.5.2-3a中给出，适用于每个天线连接器。是否符合一致性要求可以通过看是否满足

TS 38.141-1 [1]表6.6.3.5.2-1a或6.6.3.5.2-3a中的ACLR限值或者TS 38.141-1 [1]表6.6.3.5.2-2中的绝对基本限值来验证，以较不严格者为准。

### 3.2.4 1-H型基站

TS 38.141-1 [1]表 6.6.3.5.2-2 中的 ACLR 绝对基本限值 + X（其中  $X = 10\log_{10}(N_{\text{TXU, counted per cell}})$ ）或者TS 38.141-1 [1]表6.6.3.5.2-1或6.6.3.5.2-3中的ACLR限值（以较不严格者为准）应适用于每个TAB连接器TX最小小区组。

是否符合1-H型基站ACLR限值要求可以通过看是否满足至少一项制造商确定的以下标准来验证：

- 1) 在所指配信道频率上、TAB连接器TX最小小区组中每个TAB连接器处测得的滤波后平均功率之和与在相邻信道频率上、TAB连接器TX最小小区组中每个TAB连接器处测得的滤波后平均功率之和的比值，应大于或等于基站的ACLR限值。这应适用于每个TAB连接器TX最小小区组。

或者

- 2) 对于每个TAB连接器TX最小小区组，对TAB连接器TX最小小区组中的每一个TAB连接器，以所指配信道频率为中心、TAB连接器处的滤波后平均功率与以相邻信道频率为中心、本TAB连接器处的滤波后平均功率的比值，均应大于或等于基站的ACLR限值。

若适用1-H型基站的ACLR绝对基本限值，则可以通过看是否满足至少一项制造商确定的以下标准来验证是否符合一致性要求：

- 1) 在相邻信道频率上、TAB连接器TX最小小区组中每个TAB连接器处测得的滤波后平均功率之和应小于或等于基站的ACLR绝对基本限值 + X（其中  $X = 10\log_{10}(N_{\text{TXU, counted per cell}})$ ）。这应适用于每个TAB连接器TX最小小区组。

或者

- 2) 对于每个TAB连接器TX最小小区组，以相邻信道频率为中心、每个TAB连接器处的滤波后平均功率，应小于或等于基站的ACLR绝对基本限值（对TAB连接器TX最小小区组中的每个TAB连接器，通过  $X - 10\log_{10}(n)$  来标度），其中n是TAB连接器TX最小小区组中TAB连接器的数量。

## 3.3 传导累积相邻信道泄漏比（CACLR）

### 3.3.1 一般性要求

子块间隔或射频间带宽间隔中的累积相邻信道泄漏功率比（CACLR）指的是以下比值：

- a) 以与子块间隔或射频间带宽间隔每一侧相邻的两个载波的所指配信道频率为中心的滤波后平均功率之和，与
- b) 以与相应子块边缘或基站射频带宽边缘之一相邻的频率信道为中心的滤波后平均功率。

在TS 38.141-1 [1]表6.6.3.5.2-4中定义了相邻信道频率的假设滤波器，在TS 38.141-1 [1]表6.6.3.5.2-6中定义了所指配信道上的滤波器。

Table 6.6.3.5.2-4: Base station ACLR limit

<i>BS channel bandwidth of lowest/highest NR carrier transmitted</i> $BW_{\text{Channel}}$ (MHz)	Sub-block or Inter RF Bandwidth gap size ( $W_{\text{gap}}$ ) where the limit applies (MHz)	BS adjacent channel centre frequency offset below or above the sub-block or Base Station RF Bandwidth edge (inside the gap)	Assumed adjacent channel carrier	Filter on the adjacent channel frequency and corresponding filter bandwidth	ACLR limit
5, 10, 15, 20	$5 \leq W_{\text{gap}} < 15$ (Note 3)	2.5 MHz	5 MHz NR (Note 2)	Square ( $BW_{\text{Config}}$ )	44.2 dB
	$5 \leq W_{\text{gap}} < 45$ (Note 4)				
	$10 < W_{\text{gap}} < 20$ (Note 3)	7.5 MHz	5 MHz NR (Note 2)		
	$10 \leq W_{\text{gap}} < 50$ (Note 4)				
25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	$20 \leq W_{\text{gap}} < 60$ (Note 4)	10 MHz	20 MHz NR (Note 2)	Square ( $BW_{\text{Config}}$ )	43.8 dB
	$20 \leq W_{\text{gap}} < 30$ (Note 3)				
	$40 < W_{\text{gap}} < 80$ (Note 4)	30 MHz	20 MHz NR (Note 2)		
	$40 \leq W_{\text{gap}} < 50$ (Note 3)				

Note 1:  $BW_{\text{Config}}$  is the transmission bandwidth configuration of the assumed adjacent channel carrier.

Note 2: With SCS that provides largest transmission bandwidth configuration ( $BW_{\text{Config}}$ ).

Note 3: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 5, 10, 15, 20 MHz.

Note 4: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 MHz.

Table 6.6.3.5.2-6: Filter parameters for the assigned channel

RAT of the carrier adjacent to the sub-block or Inter RF Bandwidth gap	Filter on the assigned channel frequency and corresponding filter bandwidth
NR	NR of same BW with SCS that provides largest transmission bandwidth configuration

### 3.3.2 限值和基本限值

对于频段n96和n102除外的非连续频谱或多个频段中的操作，位于子块间隔或射频间带宽间隔任一侧的NR载波的ACLR应高于TS 38.141-1 [1]表6.6.3.5.2-4中规定的值。

对于频段n96和n102的非连续频谱中的操作，位于子块间隔任一侧的NR载波的ACLR应高于TS 38.141-1 [1]表6.6.3.5.2-4a中规定的值。

Table 6.6.3.5.2-4a: Base Station CACLR limit for band n96 and n102

BS channel bandwidth of lowest/highest NR carrier transmitted $BW_{\text{Channel}}$ (MHz)	Sub-block or Inter RF Bandwidth gap size ( $W_{\text{gap}}$ ) where the limit applies (MHz)	BS adjacent channel centre frequency offset below or above the sub-block or Base Station RF Bandwidth edge (inside the gap)	Assumed adjacent channel carrier	Filter on the adjacent channel frequency and corresponding filter bandwidth	CACLR limit
10, 20, 40, 60, 80	$20 \leq W_{\text{gap}} < 60$	10 MHz	20 MHz NR (Note 2)	Square ( $BW_{\text{Config}}$ )	35 dB
	$40 < W_{\text{gap}} < 80$	30 MHz	20 MHz NR (Note 2)	Square ( $BW_{\text{Config}}$ )	40 dB

Note 1:  $BW_{\text{Config}}$  is the transmission bandwidth configuration of the assumed adjacent channel carrier.

Note 2: With SCS that provides largest transmission bandwidth configuration ( $BW_{\text{Config}}$ ).

在TS 38.141-1 [1]表6.6.3.5.2-5中规定了CACLR绝对基本限值。

Table 6.6.3.5.2-5: Base station CACLR absolute basic limit

BS category / BS class	CACLR absolute basic limit
Category A Wide Area BS	-13 dBm/MHz
Category B Wide Area BS	-15 dBm/MHz
Medium Range BS	-25 dBm/MHz
Local Area BS	-32 dBm/MHz

### 3.3.3 1-C型基站

在TS 38.141-1 [1]表6.6.3.5.2-4中给出了1-C型基站的CACLR测试要求，适用于每个天线连接器。是否符合一致性要求可以通过看是否满足TS 38.141-1 [1]表6.6.3.5.2-4中的CACLR限值或TS 38.141-1 [1]表6.6.3.5.2-5中的绝对基本限值来验证，以较不严格者为准。

### 3.3.4 1-H型基站

TS 38.141-1 [1] + X 表 6.6.3.5.2-5 中的 CACLR 绝对基本限值（其中  $X = 10 \log_{10}(N_{\text{TXU, counted per cell}})$ ）或TS 38.141-1 [1]表6.6.3.5.2-4中的CACLR限值（以较不严格者为准）应适用于每个TAB连接器TX最小小区组。

是否符合1-H型基站CACLR限值要求可以通过看是否满足至少一项制造商确定的以下标准来验证：

- 1) 在所指配信道频率上、TAB连接器TX最小小区组中每个TAB连接器处测得的滤波后平均功率之和与在相邻信道频率上、TAB连接器TX最小小区组中每个TAB连接器处测得的滤波后平均功率之和的比值，应大于或等于基站的CACLR限值。这应适用于每个TAB连接器TX最小小区组。

或者

- 2) 对于每个TAB连接器TX最小小区组，对TAB连接器TX最小小区组中的每一个TAB连接器，以所指配信道频率为中心、TAB连接器处的滤波后平均功率与以相邻信道频率为中心、本TAB连接器处的滤波后平均功率的比值，均应大于或等于基站的CACLR限值。

若适用1-H型基站的CACLR绝对基本限值，则可以通过看是否满足至少一项制造商确定的以下标准来验证是否符合一致性要求：

- 1) 在相邻信道频率上、TAB连接器TX最小小区组中每个TAB连接器处测得的滤波后平均功率之和应小于或等于基站的CACLR绝对基本限值 + X（其中 $X = 10\log_{10}(N_{\text{TXU,countedpercell}})$ ）。这应适用于每个TAB连接器TX最小小区组。

或者

- 2) 对于每个TAB连接器TX最小小区组，以相邻信道频率为中心、每个TAB连接器处的滤波后平均功率，应小于或等于基站的CACLR绝对基本限值（对TAB连接器TX最小小区组中的每个TAB连接器，通过 $X - 10\log_{10}(n)$ 来标度），其中n是TAB连接器TX最小小区组中TAB连接器的数量。

### 3.4 传导发射机杂散发射

#### 3.4.1 1-C型基站的传导发射机杂散发射

每个天线连接器的1-C型基站的TX杂散发射不应超过第3.4.3-3.4.6节中定义的适用的基本限值。

#### 3.4.2 1-H型基站的传导发射机杂散发射

1-H型基站的TX杂散发射要求是，对于每个TAB连接器TX最小小区组和第3.4.3-3.4.6节中每个适用的基本限值，TAB连接器TX最小小区组的TAB连接器处的功率总和发射不应超过规定为基本限值+X的限值，其中 $X = 10\log_{10}(N_{\text{TXU,countedpercell}})$ ，除非在区域规则中另有规定。

注 – 是否符合1-H型基站杂散发射要求可以通过看是否满足至少一项制造商确定的以下标准来验证：

- 1) 在TAB连接器TX最小小区组中的每个TAB连接器上测得的发射功率之和应小于或等于本节中为相应频率范围而定义的限值。

或者

- 2) 每个TAB连接器上的无用发射功率应小于或等于本节中为相应频率范围而定义的1-H型基站的限值，按 $-10\log_{10}(n)$ 进行标度，其中n是TAB连接器TX最小小区组中TAB连接器的数量。

#### 3.4.3 发射机杂散发射的基本限值

针对类别A的TS 38.141-1 [1]表6.6.5.5.1.1-1中的限值或者针对类别B的TS 38.141-1 [1]表6.6.5.5.1.1-2中的限值应适用。类别A或类别B限值的应用应与第3.1节中有关工作频段无用发射的应用相同，并如制造商所声明。

**Table 6.6.5.5.1.1-1: General BS transmitter spurious emission limits in FR1, Category A**

Spurious frequency range	Basic limit	Measurement bandwidth	Notes
9 kHz – 150 kHz	-13 dBm	1 kHz	Note 1, Note 4
150 kHz – 30 MHz		10 kHz	Note 1, Note 4
30 MHz – 1 GHz		100 kHz	Note 1
1 GHz – 12.75 GHz		1 MHz	Note 1, Note 2
12.75 GHz – 5 <sup>th</sup> harmonic of the upper frequency edge of the DL <i>operating band</i> in GHz		1 MHz	Note 1, Note 2, Note 3
12.75 GHz - 26 GHz	-13 dBm	1 MHz	Note 1, Note 2, Note 5

NOTE 1: Measurement bandwidths as in ITU-R SM.329 [5], s4.1.

NOTE 2: Upper frequency as in ITU-R SM.329 [5], s2.5 Table 1.

NOTE 3: This spurious frequency range applies only for *operating bands* for which the 5<sup>th</sup> harmonic of the upper frequency edge of the DL *operating band* is reaching beyond 12.75 GHz.

NOTE 4: This spurious frequency range applies only to *BS type 1-C* and *BS type 1-H*.

NOTE 5: Applies only for band n96 and n102.

**Table 6.6.5.5.1.1-2: General BS transmitter spurious emission limits in FR1, Category B**

Spurious frequency range	Basic limit	Measurement bandwidth	Notes
9 kHz – 150 kHz	-36 dBm	1 kHz	Note 1, Note 4
150 kHz – 30 MHz		10 kHz	Note 1, Note 4
30 MHz – 1 GHz		100 kHz	Note 1
1 GHz – 12.75 GHz	-30 dBm	1 MHz	Note 1, Note 2
12.75 GHz – 5 <sup>th</sup> harmonic of the upper frequency edge of the DL <i>operating band</i> in GHz		1 MHz	Note 1, Note 2, Note 3
12.75 GHz - 26 GHz	-30 dBm	1 MHz	Note 1, Note 2, Note 5

NOTE 1: Measurement bandwidths as in ITU-R SM.329 [5], s4.1.

NOTE 2: Upper frequency as in ITU-R SM.329 [5], s2.5 Table 1.

NOTE 3: This spurious frequency range applies only for *operating bands* for which the 5<sup>th</sup> harmonic of the upper frequency edge of the DL *operating band* is reaching beyond 12.75 GHz.

NOTE 4: This spurious frequency range applies only to *BS type 1-C* and *BS type 1-H*.

NOTE 5: Applies only for band n102.

### 3.4.4 保护自己或不同基站的基站接收机

本要求应适用于NR FDD操作，以便防止基站发射机的发射降低基站接收机的灵敏度。对于具有公共或独立Tx/Rx天线连接器/TAB连接器的任何类型的基站，在1-C型基站发射天线连接器或1-H型基站TAB连接器处进行测量。

基本限值在TS 38.141-1 [1]的表6.6.5.5.1.2-1中提供。

Table 6.6.5.1.2-1: BS spurious emissions *basic limits* for protection of the BS receiver

BS class	Frequency range	Basic limit	Measurement bandwidth
Wide Area BS	F <sub>UL_low</sub> – F <sub>UL_high</sub>	–96 dBm	100 kHz
Medium Range BS		–91 dBm	
Local Area BS		–88 dBm	

### 3.4.5 附加的杂散发射要求

在某些区域，TS 38.141-1 [1]中的以下附加要求可能适用于：

- 与工作于其他频段的系统共存的基站，要求见表6.6.5.5.1.3-1。
- 保护PHS，要求见表6.6.5.5.1.3-2。
- 工作于1 432-1 452 MHz内频段n50和n75上以及频段n51和n76上的基站，要求见表6.6.5.5.1.3-4。
- 工作于1 492-1 517 MHz内NR频段n50和n75上以及14 92-1 518 MHz内频段n74上的基站，要求见表6.6.5.5.1.3-5。
- 工作于频段n13和n14上的基站，要求见表6.6.5.5.1.3-6。
- 工作于频段n30上的基站，要求见表6.6.5.5.1.3-7。
- 工作于频段n48上的基站，要求见表6.6.5.5.1.3-8。
- 工作于频段n26上的基站，用于保护800 MHz公共安全操作，要求见表6.6.5.5.1.3-9。
- 工作于某些区域中频段n77上3.45-3.55 GHz内的基站，要求见表6.6.5.5.1.3-11。
- 工作于CEPT国家中频段n101上的基站，要求见表6.6.5.5.1.3-12。
- 工作于CEPT国家中频段n100上的基站，要求见表6.6.5.5.1.3-13。

<b>System type for NR to co-exist with</b>	<b>Frequency range for co-existence requirement</b>	<b>Basic limit</b>	<b>Measurement bandwidth</b>	<b>Note</b>
GSM900	921-960 MHz	-57 dBm	100 kHz	This requirement does not apply to BS operating in band n8
	876-915 MHz	-61 dBm	100 kHz	For the frequency range 880-915 MHz, this requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.6.5.5.1.2.
DCS1800	1 805-1 880 MHz	-47 dBm	100 kHz	This requirement does not apply to BS operating in band n3.
	1 710-1 785 MHz	-61 dBm	100 kHz	This requirement does not apply to BS operating in band n3, since it is already covered by the requirement in clause 6.6.5.5.1.2.
PCS1900	1 930-1 990 MHz	-47 dBm	100 kHz	This requirement does not apply to BS operating in band n2, n25 or band n70.
	1 850-1 910 MHz	-61 dBm	100 kHz	This requirement does not apply to BS operating in band n2 or n25 since it is already covered by the requirement in clause 6.6.5.5.1.2.
GSM850 or CDMA850	869-894 MHz	-57 dBm	100 kHz	This requirement does not apply to BS operating in band n5 or n26.
	824-849 MHz	-61 dBm	100 kHz	This requirement does not apply to BS operating in band n5 or n26, since it is already covered by the requirement in clause 6.6.5.5.1.2.
UTRA FDD Band I or E-UTRA Band 1 or NR Band n1	2 110-2 170 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n1 or n65
	1 920-1 980 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n1 or n65, since it is already covered by the requirement in clause 6.6.5.5.1.2.
UTRA FDD Band II or E-UTRA Band 2 or NR Band n2	1 930-1 990 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n2 or n70.
	1 850-1 910 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n2, since it is already covered by the requirement in clause 6.6.5.5.1.2.
UTRA FDD Band III or E-UTRA Band 3 or NR Band n3	1 805-1 880 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n3.
	1 710-1 785 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n3, since it is already covered by the requirement in clause 6.6.5.5.1.2.
UTRA FDD Band IV or E-UTRA Band 4	2 110-2 155 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n66
	1 710-1 755 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n66, since it is already covered by the requirement in clause 6.6.5.5.1.2.
UTRA FDD Band V or E-UTRA Band 5 or NR Band n5	869-894 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n5 or n26.
	824-849 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n5 or n26, since it is already covered by the requirement in clause 6.6.5.5.1.2.
UTRA FDD Band VI, XIX or E-UTRA Band 6, 18, 19 or NR Band n18	860-890 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n18.
	815-830 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n18, since it is already covered by the requirement in clause 6.6.5.2.2.
	830-845 MHz	-49 dBm	1 MHz	
UTRA FDD Band VII or	2 620-2 690 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n7.

E-UTRA Band 7 or NR Band n7	2 500-2 570 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n7, since it is already covered by the requirement in clause 6.6.5.5.1.2.
UTRA FDD Band VIII or E-UTRA Band 8 or NR Band n8	925-960 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n8 or n100.
	880-915 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.6.5.5.1.2.
UTRA FDD Band IX or E-UTRA Band 9	1 844.9-1 879.9 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n3.
	1 749.9-1 784.9 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n3, since it is already covered by the requirement in clause 6.6.5.5.1.2.
UTRA FDD Band X or E-UTRA Band 10	2 110-2 170 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n66
	1 710-1 770 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n66, since it is already covered by the requirement in clause 6.6.5.5.1.2.
UTRA FDD Band XI or XXI or E-UTRA Band 11 or 21	1 475.9-1 510.9 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n74, n75, n92 or n94.
	1 427.9-1 447.9 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75, n76, n91, n92, n93 or n94.
	1 447.9-1 462.9 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n74, n75, n92 or n94.
UTRA FDD Band XII or E-UTRA Band 12 or NR Band n12	729-746 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n12 or n85.
	699-716 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n12 or n85, since it is already covered by the requirement in clause 6.6.5.5.1.2. For NR BS operating in n29, it applies 1 MHz below the Band n29 downlink operating band (Note 5).
UTRA FDD Band XIII or E-UTRA Band 13 or NR Band n13	746-756 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n13.
	777-787 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n13, since it is already covered by the requirement in clause 6.6.5.5.1.2
UTRA FDD Band XIV or E-UTRA Band 14 or NR Band n14	758-768 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n14.
	788-798 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n14, since it is already covered by the requirement in clause 6.6.5.5.1.2
E-UTRA Band 17	734-746 MHz	-52 dBm	1 MHz	
	704-716 MHz	-49 dBm	1 MHz	For NR BS operating in n29, it applies 1 MHz below the Band n29 downlink operating band (Note 5).
UTRA FDD Band XX or E-UTRA Band 20 or NR Band n20	791-821 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n20 or n28.
	832-862 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n20, since it is already covered by the requirement in clause 6.6.5.5.1.2.
UTRA FDD Band XXII or E-UTRA Band 22	3 510-3 590 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n48, n77 or n78.
	3 410-3 490 MHz	-49 dBm	1 MHz	This is not applicable to BS operating in Band n77 or n78.

E-UTRA Band 24 or NR Band n24	1 525-1 559 MHz	-52 dBm	1 MHz	
	1 626.5-1 660.5 MHz	-49 dBm	1 MHz	
UTRA FDD Band XXV or E-UTRA Band 25 or NR band n25	1 930-1 995 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n2, n25 or n70.
	1 850-1 915 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n25 since it is already covered by the requirement in clause 6.6.5.5.1.2. For BS operating in Band n2, it applies for 1 910 MHz to 1915 MHz, while the rest is covered in clause 6.6.5.5.1.2.
UTRA FDD Band XXVI or E-UTRA Band 26 or NR Band n26	859-894 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n5 or n26.
	814-849 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n26 since it is already covered by the requirement in clause 6.6.5.5.1.2. For BS operating in Band n5, it applies for 814 MHz to 824 MHz, while the rest is covered in clause 6.6.5.5.1.2.
E-UTRA Band 27	852-869 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n5.
	807-824 MHz	-49 dBm	1 MHz	This requirement also applies to BS operating in Band n28, starting 4 MHz above the Band n28 downlink <i>operating band</i> (Note 5).
E-UTRA Band 28 or NR Band n28	758-803 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n20, n67 or n28.
	703-748 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n28, since it is already covered by the requirement in clause 6.6.5.5.1.2. For BS operating in band n67, it applies for 703 MHz to 736 MHz.
E-UTRA Band 29 or NR Band n29	717-728 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n29 or n85.
E-UTRA Band 30 or NR Band n30	2 350-2 360 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n30.
	2 305-2 315 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n30, since it is already covered by the requirement in clause 6.6.5.5.1.2.
E-UTRA Band 31	462.5-467.5 MHz	-52 dBm	1 MHz	
	452.5-457.5 MHz	-49 dBm	1 MHz	
UTRA FDD band XXXII or E-UTRA band 32	1 452-1 496 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n74, n75, n92 or n94.
UTRA TDD Band a) or E- UTRA Band 33	1 900-1 920 MHz	-52 dBm	1 MHz	
UTRA TDD Band a) or E- UTRA Band 34 or NR band n34	2 010-2 025 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n34.
UTRA TDD Band b) or E- UTRA Band 35	1 850-1 910 MHz	-52 dBm	1 MHz	
UTRA TDD Band b) or E- UTRA Band 36	1 930-1 990 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n2 or n25.

UTRA TDD Band c) or E-UTRA Band 37	1 910-1 930 MHz	-52 dBm	1 MHz	
UTRA TDD Band d) or E-UTRA Band 38 or NR Band n38	2 570-2 620 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n38.
UTRA TDD Band f) or E-UTRA Band 39 or NR band n39	1 880-1 920 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n39.
UTRA TDD Band e) or E-UTRA Band 40 or NR Band n40	2 300-2 400 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Bands n30 or n40.
E-UTRA Band 41 or NR Band n41	2 496-2 690 MHz	-52 dBm	1 MHz	This is not applicable to BS operating in Band n41 or n53.
E-UTRA Band 42	3 400-3 600 MHz	-52 dBm	1 MHz	This is not applicable to BS operating in Band n48, n77 or n78.
E-UTRA Band 43	3 600-3 800 MHz	-52 dBm	1 MHz	This is not applicable to BS operating in Band n48, n77 or n78.
E-UTRA Band 44	703-803 MHz	-52 dBm	1 MHz	This is not applicable to BS operating in Band n28.
E-UTRA Band 45	1447-1467 MHz	-52 dBm	1 MHz	
E-UTRA Band 47	5 855-5 925 MHz	-52 dBm	1 MHz	
E-UTRA Band 48 or NR Band n48	3 550-3 700 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n48, n77 and n78.
E-UTRA Band 50 or NR band n50	1 432-1 517 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75, n76, n91, n92, n93 or n94.
E-UTRA Band 51 or NR Band n51	1 427-1 432 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n75, n76, n91, n92, n93 or n94.
E-UTRA Band 53 or NR Band n53	2 483.5-2 495 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n41, n53 or n90.
E-UTRA Band 65 or NR Band n65	2 110-2 200 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n1 or n65
	1 920-2 010 MHz	-49 dBm	1 MHz	For BS operating in Band n1, it applies for 1 980 MHz to 2010 MHz, while the rest is covered in clause 6.6.5.5.1.2. This requirement does not apply to BS operating in band n65, since it is already covered by the requirement in clause 6.6.5.5.1.2.
E-UTRA Band 66 or NR Band n66	2 110-2 200 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n66.
	1 710-1 780 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n66, since it is already covered by the requirement in clause 6.6.5.5.1.2.
E-UTRA Band 67 or NR Band n67	738-758 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n28 or n67.

E-UTRA Band 68	753-783 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n28.
	698-728 MHz	-49 dBm	1 MHz	For BS operating in Band n28, this requirement applies between 698 MHz and 703 MHz, while the rest is covered in clause 6.6.5.5.1.2.
E-UTRA Band 69	2 570-2 620 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n38.
E-UTRA Band 70 or NR Band n70	1 995-2 020 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n2, n25 or n70
	1 695-1 710 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n70, since it is already covered by the requirement in clause 6.6.5.5.1.2.
E-UTRA Band 71 or NR Band n71	617-652 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n71
	663-698 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n71, since it is already covered by the requirement in clause 6.6.5.5.1.2.
E-UTRA Band 72	461-466 MHz	-52 dBm	1 MHz	
	451-456 MHz	-49 dBm	1 MHz	
E-UTRA Band 74 or NR Band n74	1 475-1 518 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n75, n75, n92 or n94.
	1 427-1 470 MHz	-49 dBm	1MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75, n76, n91, n92, n93 or n94.
E-UTRA Band 75 or NR Band n75	1 432-1 517 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75, n76, n91, n92, n93 or n94.
E-UTRA Band 76 or NR Band n76	1 427-1 432 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n75, n76, n91, n92, n93 or n94.
NR Band n77	3.3-4.2 GHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n48, n77 or n78
NR Band n78	3.3-3.8 GHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n48, n77 or n78
NR Band n79	4.4-5.0 GHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n79
NR Band n80	1 710-1 785 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n3, since it is already covered by the requirement in clause 6.6.5.5.1.2.
NR Band n81	880-915 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.6.5.5.1.2.
NR Band n82	832-862 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n20, since it is already covered by the requirement in clause 6.6.5.5.1.2.
NR Band n83	703-748 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n28, since it is already covered by the requirement in clause 6.6.5.5.1.2. For BS operating in Band n67, it applies for 703 MHz to 736 MHz.
NR Band n84	1 920-1 980 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n1, since it is already covered by the requirement in clause 6.6.5.5.1.2.
E-UTRA Band 85 or NR Band n85	728-746 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in band n12 or n85.
	698-716 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n12 or n85, since it is already covered by the requirement in clause 6.6.5.5.1.2.

				For NR BS operating in n29, it applies 1 MHz below the Band n29 downlink operating band (Note 5).
NR Band n86	1 710-1 780 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n66, since it is already covered by the requirement in clause 6.6.5.5.1.2.
NR Band n89	824-849 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n5, since it is already covered by the requirement in clause 6.6.5.5.1.2.
NR Band n91	1 427-1 432 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n75 or n76.
	832-862 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n20, since it is already covered by the requirement in clause 6.6.5.5.1.2.
NR Band n92	1 432-1 517 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75 or n76.
	832-862 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n20, since it is already covered by the requirement in clause 6.6.5.5.1.2.
NR Band n93	1 427-1 432 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n75 or n76.
	880-915 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.6.5.5.1.2.
NR Band n94	1 432-1 517 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75 or n76.
	880-915 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.6.5.5.1.2.
NR Band n95	2 010-2 025 MHz	-52 dBm	1 MHz	
NR Band n96	5 925-7 125 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n96 or n102.
NR Band n97	2 300-2 400 MHz	-52 dBm	1 MHz	
NR Band n98	1 880-1 920 MHz	-52 dBm	1 MHz	
NR Band n99	1 626.5-1 660.5 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n24, since it is already covered by the requirement in clause 6.6.5.5.1.2.
NR Band n100	919.4-925 MHz	-52 dBm	1 MHz	This requirement does not apply to E-UTRA BS operating in Band n8 or n100.
	874.4-880 MHz	-49 dBm	1 MHz	This requirement does not apply to BS operating in band n100, since it is already covered by the requirement in clause 6.6.5.5.1.2.
NR Band n101	1 900-1 910 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n101.
NR Band n102	5 925-6 425 MHz	-52 dBm	1 MHz	This requirement does not apply to BS operating in Band n96 or n102.
E-UTRA Band 103	757-758 MHz	-52 dBm	1 MHz	
	787-788 MHz	-49 dBm	1 MHz	

NOTE 1: As defined in the scope for spurious emissions in this clause, except for the cases where the noted requirements apply to a BS operating in Band n28, the co-existence requirements in Table 6.6.5.5.1.3-1 do not apply for the  $\Delta f_{\text{OBUE}}$  frequency range immediately outside the downlink *operating band* (see TS 38.104 [2], Table 5.2-1). Emission limits for this excluded frequency range may be covered by local or regional requirements.

NOTE 2: Table 6.6.5.5.1.3-1 assumes that two *operating bands*, where the frequency ranges in TS 38.104 [2], Table 5.2-1 would be overlapping, are not deployed in the same geographical area. For such a case of operation with overlapping frequency arrangements in the same geographical area, special co-existence requirements may apply that are not covered by the 3GPP specifications.

NOTE 3: TDD base stations deployed in the same geographical area, that are synchronized and use the same or adjacent *operating bands* can transmit without additional co-existence requirements. For unsynchronized base stations, special co-existence requirements may apply that are not covered by the 3GPP specifications.

NOTE 4: For Band n28 BS, specific solutions may be required to fulfil the spurious emissions limits for BS for co-existence with E-UTRA Band 27 UL *operating band*.

NOTE 5: For NR Band n29 BS, specific solutions may be required to fulfil the spurious emissions limits for NR BS for co-existence with UTRA Band XII, E-UTRA Band 12 or NR Band n12 UL operating band, E-UTRA Band 17 UL operating band or E-UTRA Band 85 UL or NR Band n85 UL operating band.

**Table 6.6.5.5.1.3-2: BS spurious emissions *basic limits* for BS for co-existence with PHS**

Frequency range	Basic limit	Measurement bandwidth	Note
1 884.5-1 915.7 MHz	-41 dBm	300 kHz	Applicable when co-existence with PHS system operating in 1 884.5-1 915.7 MHz

**Table 6.6.5.5.1.3-4: Additional operating band unwanted emission *basic limits* for BS operating in Band n50 and n75 within 1432-1452 MHz, and in Band 51 and 76**

Filter centre frequency, filter	Basic limit	Measurement bandwidth
$F_{\text{filter}} = 1\,413.5$ MHz	-42 dBm	27 MHz

**Table 6.6.5.5.1.3-5: Operating band n50, n74 and n75 declared emission above 1518 MHz**

Filter centre frequency, $F_{\text{filter}}$	Declared emission <i>basic limit</i> (dBm)	Measurement bandwidth
$1\,518.5 \text{ MHz} \leq F_{\text{filter}} \leq 1\,519.5 \text{ MHz}$	$P_{\text{EM},n50,a}$	1 MHz
$1\,520.5 \text{ MHz} \leq F_{\text{filter}} \leq 1\,558.5 \text{ MHz}$	$P_{\text{EM},n50,b}$	1 MHz

**Table 6.6.5.5.1.3-6: BS Spurious emissions limits for protection of 700 MHz public safety operations**

Operating Band	Frequency range	Maximum Level	Measurement Bandwidth
n13	763-775 MHz	-46 dBm	6.25 kHz
n13	793-805 MHz	-46 dBm	6.25 kHz
n14	769-775 MHz	-46 dBm	6.25 kHz
n14	799-805 MHz	-46 dBm	6.25 kHz

**Table 6.6.5.5.1.3-7: Additional NR BS Spurious emissions limits for Band n30**

Frequency range	Basic limit	Measurement bandwidth
2 200-2 345 MHz	-45 dBm	1 MHz
2 362.5-2 365 MHz	-25 dBm	
2 365-2 367.5 MHz	-40 dBm	
2 367.5-2 370 MHz	-42 dBm	
2 370-2 395 MHz	-45 dBm	

**Table 6.6.5.2.3-8: Additional BS Spurious emissions limits for Band n48**

Frequency range	Maximum Level	Measurement Bandwidth (NOTE)	Note
3 530-3 720 MHz	-25 dBm	1 MHz	Applicable 10 MHz from the assigned channel edge
3 100-3 530 MHz 3 720-4 200 MHz	-40 dBm	1 MHz	

NOTE: The resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. However, to improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth may be smaller than the measurement bandwidth. When the resolution bandwidth is smaller than the

measurement bandwidth, the result should be integrated over the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.

**Table 6.6.5.2.3-9: BS Spurious emissions limits for protection of 800 MHz public safety operations**

Operating Band	Frequency range	Maximum Level	Measurement Bandwidth	Note
n26	851-859 MHz	-13 dBm	100 kHz	Applicable for offsets > 37.5 kHz from the channel edge

**Table 6.6.5.5.1.3-10: Additional BS Spurious emissions limits for Band n41 and n90**

Frequency range	Basic limit	Measurement Bandwidth
2 505-2 535 MHz	-42 dBm	1 MHz
NOTE: This requirement applies for carriers allocated within 2 545-2 645 MHz.		

**Table 6.6.5.5.1.3-11: Additional BS spurious emissions limits for Band n77**

Channel bandwidth [MHz]	Frequency range [MHz]	Filter centre frequency, $F_{\text{filter}}$ [MHz]	Minimum requirement [dBm]	Measurement bandwidth [MHz]
All	3 430-3 440 3 560-3 570	$3430.5 \leq F_{\text{filter}} < 3 439.5$ $3560.5 \leq F_{\text{filter}} < 3 569.5$	-25	1
All	$\leq 3 430$ $> 3 570$	$F_{\text{filter}} < 3 429.5$ $3570.5 \leq F_{\text{filter}}$	-40	1

NOTE: The resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. However, to improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth may be smaller than the measurement bandwidth. When the resolution bandwidth is smaller than the measurement bandwidth, the result should be integrated over the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.

**Table 6.6.5.5.1.3-12: Additional BS Spurious emissions limits for Band n101**

Frequency range	Maximum Level	Measurement Bandwidth	Note
1 920-1 980 MHz	-57 dBm	5 MHz	

**Table 6.6.5.5.1.3-13: Additional BS Spurious emissions limits for Band n100**

Frequency range	Maximum Level	Measurement Bandwidth	Note
880-915 MHz	-62 dBm	5 MHz	

### 3.4.6 与其他基站同址并置

当GSM900、DCS1800、PCS1900、GSM850、CDMA850、UTRA FDD、UTRA TDD、E-UTRA和/或NR基站与一个基站同址并置时，这些要求可能适用于保护其他基站接收机。

这些要求假设发射机与接收机之间的耦合损耗为30 dB，并基于与相同类别基站的同址并置。

TS 38-141-1 [1]表6.6.5.5.1.4-1中给出了基站的基本限值，其中适用于第一列中所列基站类型的同址并置要求具体取决于所声明的基站类别。对于多频段连接器，表6.6.5.5.1.4-1的注释栏中的排除和条件应适用于每个支持的工作频段。

Table 6.6.5.1.4-1: BS spurious emissions *basic limits* for BS co-located with another BS

Type of co-located BS	Frequency range for co-location requirement	Basic limit			Measurement bandwidth	Note
		WA BS	MR BS	LA BS		
GSM900	876-915 MHz	-98 dBm	-91 dBm	-70 dBm	100 kHz	
DCS1800	1 710-1785 MHz	-98 dBm	-91 dBm	-80 dBm	100 kHz	
PCS1900	1 850-1 910 MHz	-98 dBm	-91 dBm	-80 dBm	100 kHz	
GSM850 or CDMA850	824-849 MHz	-98 dBm	-91 dBm	-70 dBm	100 kHz	
UTRA FDD Band I or E-UTRA Band 1 or NR Band n1	1 920-1 980 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band II or E-UTRA Band 2 or NR Band n2	1 850-1 910 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band III or E-UTRA Band 3 or NR Band n3	1 710-1 785 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band IV or E-UTRA Band 4	1 710-1 755 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band V or E-UTRA Band 5 or NR Band n5	824-849 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band VI, XIX or E-UTRA Band 6, 19	830-845 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band VII or E-UTRA Band 7 or NR Band n7	2 500-2 570 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band VIII or E-UTRA Band 8 or NR Band n8	880-915 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band IX or E-UTRA Band 9	1 749.9-1 784.9 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band X or E-UTRA Band 10	1 710-1 770 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band XI or E-UTRA Band 11	1 427.9-1 447.9 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n50, n75, n91, n92, n93 or n94
UTRA FDD Band XII or E-UTRA Band 12 or NR Band n12	699-716 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band XIII or E-UTRA Band 13 or NR Band n13	777-787 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band XIV or E-UTRA Band 14 or NR Band n14	788-798 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 17	704-716 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 18 or NR Band n18	815-830 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band XX or E-UTRA Band 20 or NR Band n20	832-862 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band XXI or E-UTRA Band 21	1 447.9-1 462.9 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n50, n75, n92 or n94
UTRA FDD Band XXII or E-UTRA Band 22	3 410-3 490 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS

						operating in Band n48, n77 or n78
E-UTRA Band 24 or NR Band n24	1 626.5-1 660.5 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band XXV or E-UTRA Band 25 or NR Band n25	1 850-1 915 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA FDD Band XXVI or E-UTRA Band 26 or NR Band n26	814-849 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 27	807-824 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 28 or NR Band n28	703-748 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 30 or NR Band n30	2 305-2 315 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 31	452.5-457.5 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA TDD Band a) or E-UTRA Band 33	1 900-1 920 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA TDD Band a) or E-UTRA Band 34 or NR band n34	2 010-2 025 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n34
UTRA TDD Band b) or E-UTRA Band 35	1 850-1 910 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA TDD Band b) or E-UTRA Band 36	1 930-1 990 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n2 or band n25
UTRA TDD Band c) or E-UTRA Band 37	1910-1 930 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
UTRA TDD Band d) or E-UTRA Band 38 or NR Band n38	2 570-2620 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n38.
UTRA TDD Band f) or E-UTRA Band 39 or NR band n39	1 880-1 920 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n39
UTRA TDD Band e) or E-UTRA Band 40 or NR Band n40	2 300-2 400 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Bands n30 or n40.
E-UTRA Band 41 or NR Band n41	2 496-2 690 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n41 or n53
E-UTRA Band 42	3 400-3 600 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n48, n77 or n78
E-UTRA Band 43	3 600-3 800 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n48, n77 or n78
E-UTRA Band 44	703-803 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n28
E-UTRA Band 45	1 447-1 467 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 48 or NR Band n48	3 550-3 700 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n48, n77 or n78
E-UTRA Band 50 or NR band n50	1 432-1 517 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS

						operating in Band n51, n74, n75, n91, n92, n93 or n94
E-UTRA Band 51 or NR Band n51	1 427-1 432 MHz	N/A	N/A	-88 dBm	100 kHz	This is not applicable to BS operating in Band n50, n74, n75, n76, n91, n92, n93 or n94
E-UTRA Band 53 or NR Band n53	2 483.5-2 495 MHz	N/A	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n41, n53 or n90
E-UTRA Band 65 or NR Band n65	1 920-2 010 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 66 or NR Band n66	1 710-1 780 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 68	698-728 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 70 or NR Band n70	1 695-1 710 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 71 or NR Band n71	663-698 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 72	451-456 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 74 or NR Band n74	1 427-1 470 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n50, n51, n91, n92, n93 or n94
NR Band n77	3.3-4.2 GHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n48, n77 or n78
NR Band n78	3.3-3.8 GHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	This is not applicable to BS operating in Band n48, n77 or n78
NR Band n79	4.4-5.0 GHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n80	1 710-1 785 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n81	880-915 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n82	832-862 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n83	703-748 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n84	1 920-1 980 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
E-UTRA Band 85 or NR Band n85	698-716 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n86	1 710-1 780 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n89	824-849 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n91	832-862 MHz	N/A	N/A	-88 dBm	100 kHz	
NR Band n92	832-862 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n93	880-915 MHz	N/A	N/A	-88 dBm	100 kHz	
NR Band n94	880-915 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n95	2 010-2 025 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n96	5 925-7 125 MHz	N/A	-90 dBm	-87 dBm	100 kHz	This is not applicable to BS operating in Band n96 or n102
NR Band n97	2 300-2 400 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n98	1 880-1 920 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n99	1 626.5-1 660.5 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	
NR Band n100	874.4-880 MHz	-96 dBm	N/A	N/A	100 kHz	
NR Band n101	1 900-1 910 MHz	-96 dBm	N/A	N/A	100 kHz	
NR Band n102	5 925-6 425 MHz	N/A	-90 dBm	-87 dBm	100 kHz	This is not applicable to BS

						operating in Band n96 or n102
E-UTRA Band 103	787-788 MHz	-96 dBm	-91 dBm	-88 dBm	100 kHz	

NOTE 1: As defined in the scope for spurious emissions in this clause, the co-location requirements in table 6.6.5.5.1.4-1 do not apply for the frequency range extending  $\Delta f_{OBUE}$  immediately outside the BS transmit frequency range of a downlink *operating band* (see TS 38.104 [2] Table 5.2-1). The current state-of-the-art technology does not allow a single generic solution for co-location with other system on adjacent frequencies for 30dB BS-BS minimum coupling loss. However, there are certain site-engineering solutions that can be used. These techniques are addressed in TR 25.942 [15].

NOTE 2: Table 6.6.5.5.1.4-1 assumes that two *operating bands*, where the corresponding BS transmit and receive frequency ranges in TS 38.104 [2] Table 5.2-1 would be overlapping, are not deployed in the same geographical area. For such a case of operation with overlapping frequency arrangements in the same geographical area, special co-location requirements may apply that are not covered by the 3GPP specifications.

NOTE 3: Co-located TDD base stations that are synchronized and using the same or adjacent *operating band* can transmit without special co-locations requirements. For unsynchronized base stations, special co-location requirements may apply that are not covered by the 3GPP specifications.

### 3.5 传导接收机杂散发射

#### 3.5.1 传导接收机杂散发射1-C型基站

每个天线连接器的1-C型基站的接收机杂散发射应低于第3.5.3节中定义的适用的基本限值。

#### 3.5.2 传导接收机杂散发射1-H型基站

1-H型基站的接收机杂散发射是，对于每个TAB连接器TX最小小区组和第3.5.3节中每个适用的基本限值，TAB连接器TX最小小区组TAB连接器处的功率总和发射不应超过规定为基本限值+X的基站限值，其中 $X = 10\log_{10}(N_{TXU, \text{counted per cell}})$ ，除非在区域规则中另有规定。

注 – 是否符合1-H型基站发射要求可以通过看是否满足至少一项制造商确定的以下标准来验证：

- 1) 在TAB连接器TX最小小区组中的每个TAB连接器上测得的发射功率之和应小于或等于本节中为相应频率范围而定义的限值。

或者

- 2) 每个TAB连接器上的无用发射功率应小于或等于本节中为相应频率范围而定义的1-H型基站的限值，按 $-10\log_{10}(n)$ 进行标度，其中n是TAB连接器TX最小小区组中TAB连接器的数量。

#### 3.5.3 接收机杂散发射的基本限值

在TS 38.141-1 [1]表7.6.5.1-1中规定了接收机杂散发射的基本限值。

Table 7.6.5.1-1: General BS receiver spurious emissions limits

Spurious frequency range	Basic limit	Measurement bandwidth	Notes
30 MHz-1 GHz	-57 dBm	100 kHz	Note 1
1 GHz-12.75 GHz	-47 dBm	1 MHz	Note 1, Note 2
12.75 GHz – 5 <sup>th</sup> harmonic of the upper frequency edge of the UL <i>operating band</i> in GHz	-47 dBm	1 MHz	Note 1, Note 2, Note 3
12.75 GHz - 26 GHz	-47 dBm	1 MHz	Note 1, Note 2, Note 6

NOTE 1: Measurement bandwidths as in ITU-R SM.329 [5], s4.1.

NOTE 2: Upper frequency as in ITU-R SM.329 [5], s2.5 Table 1.

NOTE 3: This spurious frequency range applies only for *operating bands* for which the 5<sup>th</sup> harmonic of the upper frequency edge of the UL *operating band* is reaching beyond 12.75 GHz.

NOTE 4: The frequency range from  $\Delta f_{OBUE}$  below the lowest frequency of the BS transmitter operating band to  $\Delta f_{OBUE}$  above the highest frequency of the BS transmitter *operating band* may be excluded from the requirement.  $\Delta f_{OBUE}$  is defined in clause 6.6.1. For *multi-band connectors*, the exclusion applies for all supported *operating bands*.

NOTE 5: Void.

NOTE 6: Applies only for band n96 and n102.

#### 4 1-O型基站和2-O型基站的NR无用发射特性

工作频段无用发射掩模距离工作频段边缘的最大偏移为 $\Delta f_{OBUE}$ 。工作频段无用发射定义了每个所支持下行链路工作频段加上每个频段以上频率范围 $\Delta f_{OBUE}$ 和每个频段以下频率范围 $\Delta f_{OBUE}$ 中的无用发射。该频率范围之外的无用发射通过杂散发射特性来定义。

注 – 频率偏移 $\Delta f_{OBUE}$ 不定义如ITU-R SM.1541建议书中所述的带外和杂散域之间的边界。因此，在从工作频段边缘到 $\Delta f_{OBUE}$ 的范围内，本附件中所述的无用发射特性可能仅涵盖部分带外域频率范围。在这种情况下，对于带外域频率范围的剩余部分，应使用杂散发射特性。

对于NR工作频段， $\Delta f_{OBUE}$ 的值在有关1-O型基站和2-O型基站的表A2-8中进行定义。

表A2-8

下行链路工作频段之外的最大偏移 $\Delta f_{OBUE}$ 

基站类型	工作频段特性	$\Delta f_{OBUE}$ (MHz)
1-O型基站	$F_{DL\_high} - F_{DL\_low} < 100$ MHz	10
	$100$ MHz $\leq F_{DL\_high} - F_{DL\_low} \leq 900$ MHz	40
2-O型基站	$F_{DL\_high} - F_{DL\_low} \leq 4\,000$ MHz	1 500

## 4.1 OTA工作频段无用发射

### 4.1.1 1-O型基站的OTA工作频段无用发射

对于1-O型基站，对工作于多载波或连续CA中的RIB，这些要求适用于最外层载波的基站信道带宽。此外，对工作于非连续频谱中的RIB，在任何子块间隔内这些要求都应适用。此外，对多频段RIB，在任何视频间带宽间隔内这些要求都应适用。

#### 4.1.1.1 广域基站（类别A）

对于工作于频段n5、n8、n12、n13、n14、n26、n28、n29、n71、n85的RIB，发射不应超过TS 38.141-2 [2]表6.7.4.5.1.1-1中规定的最大电平。

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$3.8 \text{ dBm} - 7/5(f_{\text{offset}}/\text{MHz} - 0.05) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-3.2 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-4 dBm (Note 3)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -4 dBm/100 kHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUe}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void

对于工作于频段n1、n2、n3、n7、n25、n30、n34、n38、n39、n40、n41、n50、n65、n66、n70、n74、n75、n77、n78、n79的RIB，发射不应超过TS 38.141-2 [2]表6.7.4.5.1.1-2至6.7.4.5.1.1-4中规定的最大电平。

**Table 6.7.4.5.1.1-2: Wide Area BS *operating band* unwanted emission limits  
(1 GHz < NR bands ≤ 3 GHz) for Category A**

Frequency offset of measurement filter –3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$3.8 \text{ dBm} - 7/5(f_{\text{offset}}/\text{MHz} - 0.05)\text{dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	–3.2 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	–4 dBm (Note 3)	1 MHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be –4 dBm/1 MHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap <  $2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

**Table 6.7.4.5.1.1-4: Wide Area BS *operating band* unwanted emission limits  
(4.2 GHz < NR bands ≤ 6 GHz) for Category A**

Frequency offset of measurement filter –3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$4 \text{ dBm} - 7/5(f_{\text{offset}}/\text{MHz} - 0.05)\text{dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	–3 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	–4 dBm (Note 3)	1 MHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be –4 dBm/1 MHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap <  $2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

#### 4.1.1.2 广域基站类别B（选项1）

对于工作于频段n5、n8、n12、n20、n26、n28、n29、n67、n71、n85的RIB，发射不应超过TS 38.141-2 [2]表6.7.4.5.1.2-1中规定的最大电平。

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$3.8 \text{ dBm} - 7/5(f_{\text{offset}}/\text{MHz} - 0.05)\text{dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-3.2 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-7 dBm (Note 3)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10$  MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -7 dBm/ 100 kHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10$  MHz.

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

对于工作于频段n1、n2、n3、n7、n25、n34、n38、n39、n40、n41、n50、n65、n66、n70、n75、n77、n78、n79的RIB，发射不应超过TS 38.141-2 [2]表6.7.4.5.1.2-2至6.7.4.5.1.2-4中规定的最大电平。

**Table 6.7.4.5.1.2-2: Wide Area BS operating band unwanted emission limits  
(1 GHz < NR bands ≤ 3 GHz) for Category B**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$3.8 \text{ dBm} - 7/5(f_{\text{offset}}/\text{MHz} - 0.05)\text{dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-3.2 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-6 dBm (Note 3)	1 MHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -6 dBm/1 MHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap <  $2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

**Table 6.7.4.5.1.2-3: Wide Area BS operating band unwanted emission limits  
(3 GHz < NR bands ≤ 4.2 GHz) for Category B**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$4 \text{ dBm} - 7/5(f_{\text{offset}}/\text{MHz} - 0.05)\text{dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-3 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-6 dBm (Note 3)	1 MHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -6 dBm/1 MHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap <  $2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void

**Table 6.7.4.5.1.2-4: Wide Area BS operating band unwanted emission limits  
(4.2 GHz < NR bands ≤ 6 GHz) for Category B**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$4 \text{ dBm} - 7/5(f_{\text{offset}}/\text{MHz} - 0.05)\text{dB}$	100 kHz

$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\max})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\max}})$	-3 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\max}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\max}}$	-6 dBm (Note 3)	1 MHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is  $\Delta f \geq 10$  MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -6 dBm/1 MHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

NOTE 3: The requirement is not applicable when  $\Delta f_{\max} < 10$  MHz.

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void

#### 4.1.1.3 广域基站类别B（选项2）

对于工作于频段n1、n3、n8、n65的RIB，发射不应超过TS 38.141-2 [2]表6.7.4.5.1.3-1中规定的最大电平。

**Table 6.7.4.5.1.3-1: Regional Wide Area BS operating band unwanted emission limits for Category B**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Basic limit (Note 1, 2, 5)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 0.2 \text{ MHz}$	$0.015 \text{ MHz} \leq f_{\text{offset}} < 0.215 \text{ MHz}$	-3.2 dBm	30 kHz
$0.2 \text{ MHz} \leq \Delta f < 1 \text{ MHz}$	$0.215 \text{ MHz} \leq f_{\text{offset}} < 1.015 \text{ MHz}$	$-3.2 \text{ dBm} - 15 \cdot \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.215 \right) \text{ dB}$	30 kHz
(Note 4)	$1.015 \text{ MHz} \leq f_{\text{offset}} < 1.5 \text{ MHz}$	-15.2 dBm	30 kHz
$1 \text{ MHz} \leq \Delta f \leq \min(10 \text{ MHz}, \Delta f_{\max})$	$1.5 \text{ MHz} \leq f_{\text{offset}} < \min(10.5 \text{ MHz}, f_{\text{offset}_{\max}})$	-2.2 dBm	1 MHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\max}$	$10.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\max}}$	-6 dBm (Note 3)	1 MHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band, the minimum requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is  $\Delta f \geq 10$  MHz from both adjacent sub blocks on each side of the sub-block gap, where the minimum requirement within sub-block gaps shall be -6 dBm/1 MHz.

NOTE 2: For a *multi-band connector* with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the minimum requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.

NOTE 3: The requirement is not applicable when  $\Delta f_{\max} < 10$  MHz.

NOTE 4: This frequency range ensures that the range of values of  $f_{\text{offset}}$  is continuous.

NOTE 5: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 6: Void.

4.1.1.4 中程基站（类别A和类别B）

对于NR频段 ≤ 3 GHz的中程基站类别，发射不应超过TS 38.141-2 [2]表6.7.4.5.1.4-1和6.7.4.5.1.4-4中规定的最大电平。

**Table 6.7.4.5.1.4-1: Medium Range BS operating band unwanted emission limits,  $40 < P_{\text{rated,c,TRP}} \leq 47$  dBm (NR bands ≤ 3 GHz)**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$P_{\text{rated,c,TRP}} - 51.2 \text{ dB} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset,max}})$	$P_{\text{rated,c,TRP}} - 58.2 \text{ dB}$	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset,max}}$	Min( $P_{\text{rated,c,TRP}} - 60 \text{ dB}$ , $-16 \text{ dBm}$ ) (Note 3)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band* the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be  $\text{Min}(P_{\text{rated,c,TRP}} - 60 \text{ dB}, -16 \text{ dBm})/100 \text{ kHz}$ .

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

**Table 6.7.4.5.1.4-4: Medium Range BS operating band unwanted emission limits,  $P_{\text{rated,c,TRP}} \leq 40 \text{ dBm}$  (NR bands ≤ 3 GHz)**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-11.2 \text{ dB} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset,max}})$	$-18.2 \text{ dBm}$	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset,max}}$	$-20 \text{ dBm}$ (Note 3)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band* the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be  $-20 \text{ dBm}/100 \text{ kHz}$ .

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

对于  $3 \text{ GHz} < \text{NR 频段} \leq 4.2 \text{ GHz}$  的中程基站类别，发射不应超过 TS 38.141-2 [2] 表 6.7.4.5.1.4-2 和 6.7.4.5.1.4-5 中规定的最大电平。

**Table 6.7.4.5.1.4-2: Medium Range BS operating band unwanted emission limits,  $40 < P_{\text{rated,c,TRP}} \leq 47 \text{ dBm}$  ( $3 \text{ GHz} < \text{NR bands} \leq 4.2 \text{ GHz}$ )**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$P_{\text{rated,c,TRP}} - 51 \text{ dB} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offsetmax}})$	$P_{\text{rated,c,TRP}} - 58 \text{ dB}$	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offsetmax}}$	$\text{Min}(P_{\text{rated,c,TRP}} - 60 \text{ dB}, -16 \text{ dBm})$ (Note 3)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band* the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be  $\text{Min}(P_{\text{rated,c,TRP}} - 60 \text{ dB}, -16 \text{ dBm})/100 \text{ kHz}$ .

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

**Table 6.7.4.5.1.4-5: Medium Range BS operating band unwanted emission limits,  $P_{\text{rated,c,TRP}} \leq 40 \text{ dBm}$  ( $3 \text{ GHz} < \text{NR bands} \leq 4.2 \text{ GHz}$ )**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-11 \text{ dB} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offsetmax}})$	-18 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offsetmax}}$	-20 dBm (Note 3)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band* the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be  $-20 \text{ dBm}/100 \text{ kHz}$ .

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

对于4.2 GHz < NR频段 ≤ 6 GHz的中程基站类别，发射不应超过TS 38.141-2 [2]表6.7.4.5.1.4-3和6.7.4.5.1.4-6中规定的最大电平。

**Table 6.7.4.5.1.4-3: Medium Range BS operating band unwanted emission limits,  $40 < P_{\text{rated,c,TRP}} \leq 47$  dBm (4.2 GHz < NR bands ≤ 6 GHz)**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$P_{\text{rated,c,TRP}} - 51 \text{ dB} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset,max}})$	$P_{\text{rated,c,TRP}} - 58 \text{ dB}$	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset,max}}$	Min( $P_{\text{rated,c,TRP}} - 60 \text{ dB}$ , -16 dBm) (Note 3)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band* the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10$  MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be Min( $P_{\text{rated,c,TRP}} - 60$  dB, -16 dBm)/100 kHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap <  $2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10$  MHz.

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

**Table 6.7.4.5.1.4-6: Medium Range BS operating band unwanted emission limits,  $P_{\text{rated,c,TRP}} \leq 40$  dBm (4.2 GHz < NR bands ≤ 6 GHz)**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-11 \text{ dB} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset,max}})$	-18 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset,max}}$	-20 dBm (Note 3)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band* the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10$  MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -20 dBm/100 kHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap <  $2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap.

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10$  MHz.

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

#### 4.1.1.5 局域基站（类别A和类别B）

对于NR频段≤ 3 GHz的局域基站类别，发射不应超过TS 38.141-2 [2]表6.7.4.5.1.5-1中规定的最大电平。

**Table 6.7.4.5.1.5-1: Local Area BS operating band unwanted emission limits (NR bands ≤ 3 GHz)**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-19.2 \text{ dB} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offsetmax}})$	-26.2 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offsetmax}}$	-28 dBm (Note 3)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band* the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -28 dBm/100 kHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

对于3 GHz < NR频段 ≤ 4.2 GHz的局域基站类别，发射不应超过TS 38.141-2 [2]表6.7.4.5.1.5-2中规定的最大电平。

**Table 6.7.4.5.1.5-2: Local Area BS operating band unwanted emission limits (3 GHz < NR bands ≤ 4.2 GHz)**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-19 \text{ dB} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offsetmax}})$	-26 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offsetmax}}$	-28 dBm (Note 3)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band* the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -28 dBm/100 kHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap  $< 2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

对于4.2 GHz < NR频段 ≤ 6 GHz的局域基站类别，发射不应超过TS 38.141-2 [2]表6.7.4.5.1.5-3中规定的最大电平。

**Table 6.7.4.5.1.5-3: Local Area BS operating band unwanted emission limits (4.2 GHz < NR bands ≤ 6 GHz)**

Frequency offset of measurement filter -3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test requirement (Note 1, 2, 4)	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 5 \text{ MHz}$	$0.05 \text{ MHz} \leq f_{\text{offset}} < 5.05 \text{ MHz}$	$-19 \text{ dB} - \frac{7}{5} \left( \frac{f_{\text{offset}}}{\text{MHz}} - 0.05 \right) \text{ dB}$	100 kHz
$5 \text{ MHz} \leq \Delta f < \min(10 \text{ MHz}, \Delta f_{\text{max}})$	$5.05 \text{ MHz} \leq f_{\text{offset}} < \min(10.05 \text{ MHz}, f_{\text{offset}_{\text{max}}})$	-26 dBm	100 kHz
$10 \text{ MHz} \leq \Delta f \leq \Delta f_{\text{max}}$	$10.05 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	-28 dBm (Note 3)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band* the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is  $\Delta f \geq 10 \text{ MHz}$  from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be -28 dBm/100 kHz.

NOTE 2: For a *multi-band RIB* with Inter RF Bandwidth gap <  $2 * \Delta f_{\text{OBUE}}$  the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap

NOTE 3: The requirement is not applicable when  $\Delta f_{\text{max}} < 10 \text{ MHz}$ .

NOTE 4: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 5: Void.

#### 4.1.1.6 附加要求

在某些区域，以下附加要求可能适用于：

- 保护DTT，要求见TS 38.141-2 [2]第6.7.4.5.1.6.2节。
- 保护GPS，要求见TS 38.141-2 [2]第6.7.4.5.1.6.3节。
- 频段n50、n51、n74、n75、n76中的操作，要求见TS 38.141-2 [2]第6.7.4.5.1.6.4节。

#### 6.7.4.5.1.6.2 Protection of DTT

In certain regions the following requirement may apply for protection of DTT. For *BS type I-O* operating in Band n20, the level of emissions in the band 470-790 MHz, measured in an 8 MHz filter bandwidth on centre frequencies  $F_{\text{filter}}$  according to Table 6.7.4.5.1.6.2-1, shall not exceed the maximum emission TRP level shown in the table. This requirement applies in the frequency range 470-790 MHz even though part of the range falls in the spurious domain.

**Table 6.7.4.5.1.6.2-1: Declared emissions levels for protection of DTT**

Case	Measurement filter centre frequency	Condition on BS maximum aggregate EIRP / 10 MHz, $P_{\text{EIRP}_{10\text{MHz}}}$ (NOTE)	Maximum level $P_{\text{EIRP},N,\text{MAX}}$	Measurement bandwidth
A: for DTT frequencies where broadcasting is protected	$N*8 + 306$ MHz, $21 \leq N \leq 60$	$P_{\text{EIRP}_{10\text{MHz}}} \geq 59$ dBm	0 dBm	8 MHz
	$N*8 + 306$ MHz, $21 \leq N \leq 60$	$36 \leq P_{\text{EIRP}_{10\text{MHz}}} < 59$ dBm	$P_{\text{EIRP}_{10\text{MHz}}} - 59$ dBm	8 MHz
	$N*8 + 306$ MHz, $21 \leq N \leq 60$	$P_{\text{EIRP}_{10\text{MHz}}} < 36$ dBm	-23 dBm	8 MHz
B: for DTT frequencies where broadcasting is subject to an intermediate level of protection	$N*8 + 306$ MHz, $21 \leq N \leq 60$	$P_{\text{EIRP}_{10\text{MHz}}} \geq 59$ dBm	10 dBm	8 MHz
	$N*8 + 306$ MHz, $21 \leq N \leq 60$	$36 \leq P_{\text{EIRP}_{10\text{MHz}}} < 59$ dBm	$P_{\text{EIRP}_{10\text{MHz}}} - 49$ dBm	8 MHz
	$N*8 + 306$ MHz, $21 \leq N \leq 60$	$P_{\text{EIRP}_{10\text{MHz}}} < 36$ dBm	-13 dBm	8 MHz
C: for DTT frequencies where broadcasting is not protected	$N*8 + 306$ MHz, $21 \leq N \leq 60$	N.A.	22 dBm	8 MHz

NOTE:  $P_{\text{EIRP}_{10\text{MHz}}}$  (dBm) is defined by  $P_{\text{EIRP}_{10\text{MHz}}} = P_{10\text{MHz}} + G_{\text{ant}} + 9\text{dB}$ , where  $G_{\text{ant}}$  is 17 dBi.

#### 6.7.4.5.1.6.3 Protection of GPS

The level of emissions in the 1 541-1 650 MHz band, measured in measurement bandwidth according to Table 6.7.4.5.1.6.3-1 shall not exceed the maximum emission TRP limits indicated in the table. This requirement applies in the frequency range 1 541-1 650 MHz even though part of the range falls in the spurious domain.

**Table 6.7.4.5.1.6.3-1: Emissions levels for protection of GPS**

Operating Band	Frequency range (MHz)	Emission level (dBW) (Measurement bandwidth = 1 MHz)	Emission level (dBW) of discrete emissions of less than 700 Hz bandwidth (Measurement bandwidth = 1 kHz)	Emission level (dBW) of discrete emissions of less than 2 kHz bandwidth (Measurement bandwidth = 1 kHz)
n24	1 541-1 559	$P_{\text{EIRP}} - 17$ dBi + 9 dB		$P_{\text{EIRP}} - 17$ dBi + 9 dB
	1 559-1 610	$P_{\text{EIRP}} - 17$ dBi + 9 dB	$P_{\text{EIRP}} - 17$ dBi + 9 dB	
	1 610-1 650	$P_{\text{EIRP}} - 17$ dBi + 9 dB	$P_{\text{EIRP}} - 17$ dBi + 9 dB	

#### 6.7.4.5.1.6.4 Additional limits for BS operating in Bands n50, n51, n74, n75, n76

For BS operating in bands n50, n51, n74, n75 and n76 additional emission limits that might be applicable in the OBUE frequency domain are specified in clause 6.7.5.4.5.

### 4.1.2 2-O型基站的OTA工作频段无用发射

对于2-O型基站，对工作于多载波或连续CA中的RIB，这些要求适用于从连续传输带宽边缘开始的频率。此外，对工作于非连续频谱中的RIB，在任何子块间隔内这些要求都适用。

#### 4.1.2.1 OTA工作频段无用发射限值（类别A）

无用发射的功率不应超过TS 38.141-2 [2]表6.7.4.5.2.2-1、6.7.4.5.2.2-2或6.7.4.5.2.2-3中的限值。

**Table 6.7.4.5.2.2-1: OBUE limits applicable in the frequency range 24.25 – 33.4 GHz**

Frequency offset of measurement filter –3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test limit	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 0.1 * \text{BW}_{\text{contiguous}}$	$0.5 \text{ MHz} \leq f_{\text{offset}} < 0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz}$	Min(-2.3 dBm, Max( $P_{\text{rated,t,TRP}} - 32.3 \text{ dB}$ , -9.3 dBm))	1 MHz
$0.1 * \text{BW}_{\text{contiguous}} \leq \Delta f < \Delta f_{\text{max}}$	$0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offsetmax}}$	Min(-13 dBm, Max( $P_{\text{rated,t,TRP}} - 43 \text{ dB}$ , -20 dBm))	1 MHz

NOTE: For non-contiguous spectrum operation within any operating band the limit within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap.

**Table 6.7.4.5.2.2-2: OBUE limits applicable in the frequency range 37 GHz – 43.5 GHz**

Frequency offset of measurement filter –3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test limit	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 0.1 * \text{BW}_{\text{contiguous}}$	$0.5 \text{ MHz} \leq f_{\text{offset}} < 0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz}$	Min(-2.3 dBm, Max( $P_{\text{rated,t,TRP}} - 30.3 \text{ dB}$ , -9.3 dBm))	1 MHz
$0.1 * \text{BW}_{\text{contiguous}} \leq \Delta f < \Delta f_{\text{max}}$	$0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offsetmax}}$	Min(-13 dBm, Max( $P_{\text{rated,t,TRP}} - 41 \text{ dB}$ , -20 dBm))	1 MHz

NOTE: For non-contiguous spectrum operation within any operating band the limit within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap.

**Table 6.7.4.5.2.2-3: OBUE limits applicable in the frequency range 43.5 GHz – 48.2 GHz**

Frequency offset of measurement filter –3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test limit	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 0.1 * \text{BW}_{\text{contiguous}}$	$0.5 \text{ MHz} \leq f_{\text{offset}} < 0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz}$	Min(-2.1 dBm, Max( $P_{\text{rated,t,TRP}} - 30.1 \text{ dB}$ , -9.1 dBm))	1 MHz
$0.1 * \text{BW}_{\text{contiguous}} \leq \Delta f < \Delta f_{\text{max}}$	$0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offsetmax}}$	Min(-13 dBm, Max( $P_{\text{rated,t,TRP}} - 41 \text{ dB}$ , -20 dBm))	1 MHz

NOTE: For non-contiguous spectrum operation within any operating band the limit within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap.

#### 4.1.2.2 OTA工作频段无用发射限值（类别B）

无用发射的功率不应超过TS 38.141-2 [2]表6.7.4.5.2.3-1、6.7.4.5.2.3-2或6.7.4.5.2.3-3中的限值。

**Table 6.7.4.5.2.3-1: OBUE limits applicable in the frequency range 24.25 – 33.4 GHz**

Frequency offset of measurement filter –3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test limit	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 0.1 * \text{BW}_{\text{contiguous}}$	$0.5 \text{ MHz} \leq f_{\text{offset}} < 0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz}$	Min(–2.3 dBm, Max( $P_{\text{rated,t,TRP}} - 32.3 \text{ dB}$ , –9.3 dBm))	1 MHz
$0.1 * \text{BW}_{\text{contiguous}} \leq \Delta f < \Delta f_{\text{B}}$	$0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz} \leq f_{\text{offset}} < \Delta f_{\text{B}} + 0.5 \text{ MHz}$	Min(–13 dBm, Max( $P_{\text{rated,t,TRP}} - 43 \text{ dB}$ , –20 dBm))	1 MHz
$\Delta f_{\text{B}} \leq \Delta f < \Delta f_{\text{max}}$	$\Delta f_{\text{B}} + 5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	Min(–5 dBm, Max( $P_{\text{rated,t,TRP}} - 33 \text{ dB}$ , –10 dBm))	10 MHz

NOTE 1: For non-contiguous spectrum operation within any *operating band* the limit within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block.

NOTE 2:  $\Delta f_{\text{B}} = 2 * \text{BW}_{\text{contiguous}}$  when  $\text{BW}_{\text{contiguous}} \leq 500 \text{ MHz}$ , otherwise  $\Delta f_{\text{B}} = \text{BW}_{\text{contiguous}} + 500 \text{ MHz}$ .

**Table 6.7.4.5.2.3-2: OBUE limits applicable in the frequency range 37 – 43.5 GHz**

Frequency offset of measurement filter –3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test limit	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 0.1 * \text{BW}_{\text{contiguous}}$	$0.5 \text{ MHz} \leq f_{\text{offset}} < 0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz}$	Min(–2.3 dBm, Max( $P_{\text{rated,t,TRP}} - 30.3 \text{ dB}$ , –9.3 dBm))	1 MHz
$0.1 * \text{BW}_{\text{contiguous}} \leq \Delta f < \Delta f_{\text{B}}$	$0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz} \leq f_{\text{offset}} < \Delta f_{\text{B}} + 0.5 \text{ MHz}$	Min(–13 dBm, Max( $P_{\text{rated,t,TRP}} - 41 \text{ dB}$ , –20 dBm))	1 MHz
$\Delta f_{\text{B}} \leq \Delta f < \Delta f_{\text{max}}$	$\Delta f_{\text{B}} + 5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	Min(–5 dBm, Max( $P_{\text{rated,t,TRP}} - 31 \text{ dB}$ , –10 dBm))	10 MHz

NOTE 1: For non-contiguous spectrum operation within any *operating band* the limit within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block.

NOTE 2:  $\Delta f_{\text{B}} = 2 * \text{BW}_{\text{contiguous}}$  when  $\text{BW}_{\text{contiguous}} \leq 500 \text{ MHz}$ , otherwise  $\Delta f_{\text{B}} = \text{BW}_{\text{contiguous}} + 500 \text{ MHz}$ .

**Table 6.7.4.5.2.3-3: OBUE limits applicable in the frequency range 43.5 – 48.2 GHz**

Frequency offset of measurement filter –3 dB point, $\Delta f$	Frequency offset of measurement filter centre frequency, $f_{\text{offset}}$	Test limit	Measurement bandwidth
$0 \text{ MHz} \leq \Delta f < 0.1 * \text{BW}_{\text{contiguous}}$	$0.5 \text{ MHz} \leq f_{\text{offset}} < 0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz}$	Min(–2.1 dBm, Max( $P_{\text{rated,t,TRP}} - 30.1 \text{ dB}$ , –9.1 dBm))	1 MHz
$0.1 * \text{BW}_{\text{contiguous}} \leq \Delta f < \Delta f_{\text{B}}$	$0.1 * \text{BW}_{\text{contiguous}} + 0.5 \text{ MHz} \leq f_{\text{offset}} < \Delta f_{\text{B}} + 0.5 \text{ MHz}$	Min(–13 dBm, Max( $P_{\text{rated,t,TRP}} - 41 \text{ dB}$ , –20 dBm))	1 MHz
$\Delta f_{\text{B}} \leq \Delta f < \Delta f_{\text{max}}$	$\Delta f_{\text{B}} + 5 \text{ MHz} \leq f_{\text{offset}} < f_{\text{offset}_{\text{max}}}$	Min(–5 dBm, Max( $P_{\text{rated,t,TRP}} - 31 \text{ dB}$ , –10 dBm))	10 MHz

NOTE 1: For non-contiguous spectrum operation within any *operating band* the limit within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block.

NOTE 2:  $\Delta f_{\text{B}} = 2 * \text{BW}_{\text{contiguous}}$  when  $\text{BW}_{\text{contiguous}} \leq 500 \text{ MHz}$ , otherwise  $\Delta f_{\text{B}} = \text{BW}_{\text{contiguous}} + 500 \text{ MHz}$ .

### 4.1.2.3 附加的OTA工作频段无用发射限值

以下附加要求应适用于：

- 工作于频率范围24.25-27.5 GHz的基站，用于保护卫星地球探测业务，要求见TS 38.141-2 [2]表6.7.4.5.2.4.1-1。

**Table 6.7.4.5.2.4.1-1: BS radiated limits for protection of EESS**

Frequency range	Measurement filter centre frequency range	Limit	Measurement Bandwidth
23.6-24 GHz	23.7-23.9 GHz	-3 dBm (Note 1)	200 MHz
23.6-24 GHz	23.7-23.9 GHz	-9 dBm (Note 2)	200 MHz

NOTE 1: This limit applies to BS brought into use on or before 1 September 2027.

NOTE 2: This limit applies to BS brought into use after 1 September 2027.

## 4.2 OTA相邻信道泄漏比 (ACLR)

### 4.2.1 1-O型基站

对于OTA ACLR要求，应适用TS 38.141-2 [2]表6.7.3.5.1-1/2a中的OTA ACLR限值或TS 38.141-2 [2]表6.7.3.5.1-2中的OTA ACLR绝对限值，以较不严格者为准。

**表 6.7.3.5.1-1: 1-O 型基站 ACLR 限值**

最低/最高 NR 载波发射的基站信道带宽 $BW_{\text{Channel}}$ (MHz)	发射的最低载波中心频率以下或最高载波中心频率以上的基站相邻信道中心频率偏移	假设的相邻信道载波 (参考性)	相邻信道频率上的滤波器和相应的滤波器带宽	OTA ACLR 限值 (0-3 GHz)	OTA ACLR 限值 (3-6 GHz)
5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	$BW_{\text{Channel}}$	相同带宽的 NR (注 2)	平方 ( $BW_{\text{Config}}$ )	44 dB	43.8 dB
	$2 \times BW_{\text{Channel}}$	相同带宽的 NR (注 2)	平方 ( $BW_{\text{Config}}$ )	44 dB	43.8 dB
	$BW_{\text{Channel}}/2 + 2.5 \text{ MHz}$	5 MHz E-UTRA	平方 (4.5 MHz)	44 dB (注 3)	43.8 dB (注 3)
	$BW_{\text{Channel}}/2 + 7.5 \text{ MHz}$	5 MHz E-UTRA	平方 (4.5 MHz)	44 dB (注 3)	43.8 dB (注 3)

注1:  $BW_{\text{Channel}}$ 和 $BW_{\text{Config}}$ 是在所指配信道频率上传输的最低/最高NR载波的基站信道带宽和传输带宽配置。

注2: 具有提供最大传输带宽配置 ( $BW_{\text{Config}}$ ) SCS。

注3: 当频段也为E-UTRA或UTRA定义时，这些要求适用。

**Table 6.7.3.5.1-2a: BS type 1-O ACLR limit in non-contiguous spectrum or multiple bands**

<b>BS channel bandwidth of lowest/highest NR carrier transmitted <math>BW_{\text{Channel}}</math> (MHz)</b>	<b>Sub-block or Inter RF Bandwidth gap size (<math>W_{\text{gap}}</math>) where the limit applies (MHz)</b>	<b>BS adjacent channel centre frequency offset below or above the sub-block or Base Station RF Bandwidth edge (inside the gap)</b>	<b>Assumed adjacent channel carrier</b>	<b>Filter on the adjacent channel frequency and corresponding filter bandwidth</b>	<b>OTA ACLR limit (0-3 GHz)</b>	<b>OTA ACLR limit (3-6 GHz)</b>
5, 10, 15, 20	$W_{\text{gap}} \geq 15$ (Note 3)	2.5 MHz	5 MHz NR (Note 2)	Square ( $BW_{\text{Config}}$ )	44 dB	43.8 dB
	$W_{\text{gap}} \geq 45$ (Note 4)					
	$W_{\text{gap}} \geq 20$ (Note 3)	7.5 MHz	5 MHz NR (Note 2)	Square ( $BW_{\text{Config}}$ )	44 dB	43.8 dB
	$W_{\text{gap}} \geq 50$ (Note 4)					
25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	$W_{\text{gap}} \geq 60$ (Note 4)	10 MHz	20 MHz NR (Note 2)	Square ( $BW_{\text{Config}}$ )	44 dB	43.8 dB
	$W_{\text{gap}} \geq 30$ (Note 3)					
	$W_{\text{gap}} \geq 80$ (Note 4)	30 MHz	20 MHz NR (Note 2)	Square ( $BW_{\text{Config}}$ )	44 dB	43.8 dB
	$W_{\text{gap}} \geq 50$ (Note 3)					

NOTE 1:  $BW_{\text{Config}}$  is the transmission bandwidth configuration of the assumed adjacent channel carrier.

NOTE 2: With SCS that provides largest transmission bandwidth configuration ( $BW_{\text{Config}}$ ).

NOTE 3: Applicable in case the BS channel bandwidth of the NR carrier transmitted at the other edge of the gap is 5, 10, 15, 20 MHz.

NOTE 4: Applicable in case the BS channel bandwidth of the NR carrier transmitted at the other edge of the gap is 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 MHz.

**Table 6.7.3.5.1-2: BS type 1-O ACLR absolute limit**

<b>BS category / BS class</b>	<b>OTA ACLR absolute limit</b>
Category A Wide Area BS	-4 dBm/MHz
Category B Wide Area BS	-6 dBm/MHz
Medium Range BS	-16 dBm/MHz
Local Area BS	-23 dBm/MHz

NOTE 1: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 2: Void.

在TS 38.141-2 [2]表6.7.3.5.1-3中定义了相邻信道频率的假设滤波器，在TS 38.141-2 [2]表6.7.3.5.1-4中定义了所指配信道上的滤波器。

**Table 6.7.3.5.1-3: BS type 1-O CACLR limit**

<b>BS channel bandwidth of lowest/highest NR carrier transmitted</b> <b>BW<sub>Channel</sub> (MHz)</b>	<b>Sub-block or Inter RF Bandwidth gap size (Wgap) where the limit applies (MHz)</b>	<b>BS adjacent channel centre frequency offset below or above the sub-block or Base Station RF Bandwidth edge (inside the gap)</b>	<b>Assumed adjacent channel carrier</b>	<b>Filter on the adjacent channel frequency and corresponding filter bandwidth</b>	<b>OTA CACLR limit (0-3 GHz)</b>	<b>OTA CACLR limit (3-6 GHz)</b>
5, 10, 15, 20	$5 \leq W_{\text{gap}} < 15$ (Note 3)	2.5 MHz	5 MHz NR (Note 2)	Square (BW <sub>Config</sub> )	44 dB	43.8 dB
	$5 \leq W_{\text{gap}} < 45$ (Note 4)					
	$10 < W_{\text{gap}} < 20$ (Note 3)	7.5 MHz	5 MHz NR (Note 2)	Square (BW <sub>Config</sub> )	44 dB	43.8 dB
	$10 \leq W_{\text{gap}} < 50$ (Note 4)					
25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100	$20 \leq W_{\text{gap}} < 60$ (Note 4)	10 MHz	20 MHz NR (Note 2)	Square (BW <sub>Config</sub> )	44 dB	43.8 dB
	$20 \leq W_{\text{gap}} < 30$ (Note 3)					
	$40 < W_{\text{gap}} < 80$ (Note 4)	30 MHz	20 MHz NR (Note 2)	Square (BW <sub>Config</sub> )	44 dB	43.8 dB
	$40 \leq W_{\text{gap}} < 50$ (Note 3)					

NOTE 1: BW<sub>Config</sub> is the transmission bandwidth configuration of the assumed adjacent channel carrier.

NOTE 2: With SCS that provides largest transmission bandwidth configuration (BW<sub>Config</sub>).

NOTE 3: Applicable in case the BS channel bandwidth of the NR carrier transmitted at the other edge of the gap is 5, 10, 15, 20 MHz.

NOTE 4: Applicable in case the BS channel bandwidth of the NR carrier transmitted at the other edge of the gap is 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 MHz.

**Table 6.7.3.5.1-4: Filter parameters for the assigned channel**

<b>RAT of the carrier adjacent to the sub-block or Inter RF Bandwidth gap</b>	<b>Filter on the assigned channel frequency and corresponding filter bandwidth</b>
NR	NR of same BW with SCS that provides largest transmission bandwidth configuration

对于成对和非成对频谱中的操作，OTA ACLR测量结果不应低于TS 38.141-2 [2]表6.7.3.5.1-1中规定的OTA ACLR限值。

绝对总功率测量值不应超过TS 38.141-2 [2]表6.7.3.5.1-2中规定的OTA ACLR绝对限值。

对于非连续频谱或多个频段中的操作，OTA ACLR测量结果不应低于TS 38.141-2 [2]表6.7.3.5.2-3中规定的OTA ACLR限值。

#### 4.2.2 2-O型基站

对于OTA ACLR要求，应适用TS 38.141-2 [2]表6.7.3.5.2-1/3中的OTA ACLR限值或TS 38.141-2 [2]表6.7.3.5.2-2中的OTA ACLR绝对限值，以较不严格者为准。

**Table 6.7.3.5.2-1: BS type 2-O ACLR limit**

<b>BS channel bandwidth of lowest/highest NR carrier transmitted</b> $BW_{\text{Channel}}$ (MHz)	<b>BS adjacent channel centre frequency offset below the lowest or above the highest carrier centre frequency transmitted</b>	<b>Assumed adjacent channel carrier</b>	<b>Filter on the adjacent channel frequency and corresponding filter bandwidth</b>	<b>OTA ACLR limit (dB)</b>
50, 100, 200, 400	$BW_{\text{Channel}}$	NR of same BW (Note 2)	Square ( $BW_{\text{Config}}$ )	25.7 (Note 3) 23.4 (Note 4) 23.2 (Note 5)

NOTE 1:  $BW_{\text{Channel}}$  and  $BW_{\text{Config}}$  are the BS channel bandwidth and transmission bandwidth configuration of the lowest/highest NR carrier transmitted on the assigned channel frequency.

NOTE 2: With SCS that provides largest transmission bandwidth configuration ( $BW_{\text{Config}}$ ).

NOTE 3: Applicable to bands defined within the frequency spectrum range of 24.25-33.4 GHz

NOTE 4: Applicable to bands defined within the frequency spectrum range of 37-43.5 GHz

NOTE 5: Applicable to bands defined within the frequency spectrum range of 43.5-48.2 GHz

**Table 6.7.3.5.2-2: BS type 2-O ACLR absolute limit**

<b>BS class</b>	<b>ACLR absolute limit (Note 1)</b>	<b>ACLR absolute limit (Note 2)</b>
Wide-area BS	-10.3 dBm/MHz	-10.1 dBm/MHz
Medium-range BS	-17.3 dBm/MHz	-17.1 dBm/MHz
Local-area BS	-17.3 dBm/MHz	-17.1 dBm/MHz

NOTE 1: Applicable to bands defined within the frequency spectrum range of 24.25-43.5 GHz

NOTE 2: Applicable to bands defined within the frequency spectrum range of 43.5-48.2 GHz

Table 6.7.3.5.2-3: *BS type 2-O ACLR limit in non-contiguous spectrum*

<i>BS channel bandwidth of lowest/highest NR carrier transmitted (MHz)</i>	<i>Sub-block gap size (W<sub>gap</sub>) where the limit applies (MHz)</i>	<i>BS adjacent channel centre frequency offset below or above the sub-block edge (inside the gap)</i>	<i>Assumed adjacent channel carrier</i>	<i>Filter on the adjacent channel frequency and corresponding filter bandwidth</i>	<i>OTA ACLR limit (MHz)</i>
50, 100	W <sub>gap</sub> ≥ 100 (Note 5) W <sub>gap</sub> ≥ 250 (Note 6)	25 MHz	50 MHz NR (Note 2)	Square (BW <sub>Config</sub> )	25.7 (Note 3) 23.4 (Note 4) 23.2 (Note 7)
200, 400	W <sub>gap</sub> ≥ 400 (Note 6) W <sub>gap</sub> ≥ 250 (Note 5)	100 MHz	200 MHz NR (Note 2)	Square (BW <sub>Config</sub> )	25.7 (Note 3) 23.4 (Note 4) 23.2 (Note 7)

NOTE 1: BW<sub>Config</sub> is the transmission bandwidth configuration of the assumed adjacent channel carrier.

NOTE 2: With SCS that provides largest transmission bandwidth configuration (BW<sub>Config</sub>).

NOTE 3: Applicable to bands defined within the frequency spectrum range of 24.24-33.4 GHz.

NOTE 4: Applicable to bands defined within the frequency spectrum range of 37-43.5 GHz.

NOTE 5: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 50 or 100 MHz.

NOTE 6: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 200 or 400 MHz.

NOTE 7: Applicable to bands defined within the frequency spectrum range of 43.5-48.2 GHz.

在TS 38.141-2 [2]表6.7.3.5.2-4中定义了相邻信道频率的假设滤波器，在TS 38.141-2 [2]表6.7.3.5.2-5中定义了所指配信道上的滤波器。

Table 6.7.3.5.2-4: *BS type 2-O* CACLR limit in non-contiguous spectrum

<i>BS channel bandwidth of lowest/highest NR carrier transmitted (MHz)</i>	<i>Sub-block gap size (Wgap) where the limit applies (MHz)</i>	<i>BS adjacent channel centre frequency offset below or above the sub-block edge (inside the gap)</i>	<i>Assumed adjacent channel carrier</i>	<i>Filter on the adjacent channel frequency and corresponding filter bandwidth</i>	<i>OTA CACLR limit (dB)</i>
50, 100	50 ≤ Wgap < 100 (Note 5) 50 ≤ Wgap < 250 (Note 6)	25 MHz	50 MHz NR (Note 2)	Square (BW <sub>Config</sub> )	25.7 (Note 3) 23.4 (Note 4) 23.2 (Note 7)
200, 400	200 ≤ Wgap < 400 (Note 6) 200 ≤ Wgap < 250 (Note 5)	100 MHz	200 MHz NR (Note 2)	Square (BW <sub>Config</sub> )	25.7 (Note 3) 23.4 (Note 4) 23.2 (Note 7)

- NOTE 1: BW<sub>Config</sub> is the transmission bandwidth configuration of the assumed adjacent channel carrier.  
 NOTE 2: With SCS that provides largest transmission bandwidth configuration (BW<sub>Config</sub>).  
 NOTE 3: Applicable to bands defined within the frequency spectrum range of 24.24-33.4 GHz.  
 NOTE 4: Applicable to bands defined within the frequency spectrum range of 37-43.5 GHz.  
 NOTE 5: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 50 or 100 MHz.  
 NOTE 6: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 200 or 400 MHz.  
 NOTE 7: Applicable to bands defined within the frequency spectrum range of 43.5-48.2 GHz.

Table 6.7.3.5.2-5: Filter parameters for the assigned channel

<i>RAT of the carrier adjacent to the sub-block gap</i>	<i>Filter on the assigned channel frequency and corresponding filter bandwidth</i>
NR	NR of same BW with SCS that provides largest transmission bandwidth configuration

OTA ACLR测量结果不应低于TS 38.141-2 [2]表6.7.3.5.2-1中规定的OTA ACLR限值。

绝对总功率测量值不应超过TS 38.141-2 [2]表6.7.3.5.2-2中规定的OTA ACLR绝对限值。

对于非连续频谱中的操作，OTA ACLR测量结果不应低于TS 38.141-2 [2]表6.7.3.5.2-3中规定的OTA ACLR限值。

### 4.3 OTA累积相邻信道泄漏比（CACLR）

#### 4.3.1 1-O型基站

应适用TS 38.141-2 [2]表6.7.3.5.1-3中的OTA CACLR限值或TS 38.141-2 [2]表6.7.3.5.1-3a中的OTA CACLR绝对限值，以较不严格者为准。

**Table 6.7.3.5.1-3a: BS type 1-O CACLR absolute limit**

BS category / BS class	OTA CACLR absolute limit
Category A Wide Area BS	-4 dBm/MHz
Category B Wide Area BS	-6 dBm/MHz
Medium Range BS	-16 dBm/MHz
Local Area BS	-23 dBm/MHz

NOTE 1: The test requirement is derived from the basic limit a scaling factor of 9 dB and any applicable TT.

NOTE 2: Void

子块间隔和射频间带宽间隔中的CACLR指的是以下比值：

- a) 以与子块间隔或射频间带宽间隔每一侧相邻的两个载波的所指配信道频率为中心的滤波后平均功率之和，与
- b) 以与相应子块边缘或基站射频带宽边缘之一相邻的频率信道为中心的滤波后平均功率。

在TS 38.141-2 [2]表6.7.3.5.1-3中定义了相邻信道频率的假设滤波器，在TS 38.141-2 [2]表6.7.3.5.1-4中定义了所指配信道上的滤波器。

OTA CACLR测量结果不应低于TS 38.141-2 [2]表6.7.3.5.1-3中规定的OTA CACLR限值。

绝对总功率测量值不应超过TS 38.141-2 [2]表6.7.3.5.1-3a中规定的OTA CACLR绝对限值。

#### 4.3.2 2-O型基站

应适用TS 38.141-2 [2]表6.7.3.5.2-4中的OTA CACLR限值或TS 38.141-2 [2]表6.7.3.5.2-4a中的OTA CACLR绝对限值，以较不严格者为准。

**Table 6.7.3.5.2-4a: BS type 2-O CACLR absolute limit**

BS class	CACLR absolute limit (Note 1)	ACLR absolute limit (Note 2)
Wide area BS	-10.3 dBm/MHz	-10.1 dBm/MHz
Medium range BS	-17.3 dBm/MHz	-17.1 dBm/MHz
Local area BS	-17.3 dBm/MHz	-17.1 dBm/MHz

NOTE 1: Applicable to bands defined within the frequency spectrum range of 24.25-43.5 GHz  
NOTE 2: Applicable to bands defined within the frequency spectrum range of 43.5-48.2 GHz

子块间隔中的CACLR指的是以下比值：

- a) 以与子块间隔每一侧相邻的两个载波的所指配信道频率为中心的滤波后平均功率之和，与
- b) 以与相应子块边缘之一相邻的频率信道为中心的滤波后平均功率。

在TS 38.141-2 [2]表6.7.3.5.2-4中定义了相邻信道频率的假设滤波器，在TS 38.141-2 [2]表6.7.3.5.2-5中定义了所指配信道上的滤波器。

对于非连续频谱中的操作，位于子块间隔任一侧的载波的CACLR应小于TS 38.141-2 [2]表6.6.3.5.2-4中规定的值。

绝对总功率测量值不应超过TS 38.141-2 [2]表6.7.3.5.2-4a中规定的OTA CACLR绝对限值。

#### 4.4 OTA发射机杂散发射

##### 4.4.1 1-O型基站的OTA发射机杂散发射

对于类别A基站，任何杂散发射的TRP不应超过TS 38.141-2 [2]表6.7.5.2.5.1-1中的限值。对于类别B基站，任何杂散发射的TRP不应超过TS 38.141-2 [2]表6.7.5.2.5.1-2中的限值。

**Table 6.7.5.2.5.1-1: General OTA BS transmitter spurious emission limits for *BS type 1-O*, Category A**

Spurious frequency range	Test limit	Measurement bandwidth	Notes
30 MHz – 1 GHz	-13 + X dBm	100 kHz	Note 1, Note 6
1 GHz – 12.75 GHz		1 MHz	Note 1, Note 2, Note 6
12.75 GHz – 5 <sup>th</sup> harmonic of the upper frequency edge of the DL <i>operating band</i> in GHz		1 MHz	Note 1, Note 2, Note 3, Note 6

NOTE 1: Measurement bandwidths as in ITU-R SM.329 [5], s4.1.

NOTE 2: Upper frequency as in ITU-R SM.329 [5], s2.5 Table 1.

NOTE 3: This spurious frequency range applies only for *operating bands* for which the 5<sup>th</sup> harmonic of the upper frequency edge of the DL *operating band* is reaching beyond 12.75 GHz.

NOTE 4: Void.

NOTE 5: Void.

NOTE 6: X = 9 dB, unless stated differently in regional regulation.

**Table 6.7.5.2.5.1-2: General OTA BS transmitter spurious emission limits for *BS type 1-O*, Category B**

Spurious frequency range	Test limit	Measurement bandwidth	Notes
30 MHz – 1 GHz	-36 + X dBm	100 kHz	Note 1, Note 5
1 GHz – 12.75 GHz	-30 + X dBm	1 MHz	Note 1, Note 2, Note 5
12.75 GHz – 5 <sup>th</sup> harmonic of the upper frequency edge of the DL <i>operating band</i> in GHz		1 MHz	Note 1, Note 2, Note 3, Note 5

NOTE 1: Measurement bandwidths as in ITU-R SM.329 [5], s4.1.

NOTE 2: Upper frequency as in ITU-R SM.329 [5], s2.5 Table 1.

NOTE 3: This spurious frequency range applies only for *operating bands* for which the 5<sup>th</sup> harmonic of the upper frequency edge of the DL *operating band* is reaching beyond 12.75GHz.

NOTE 4: Void.

NOTE 5: X = 9 dB, unless stated differently in regional regulation.

#### 4.4.2 2-O型基站的OTA发射机杂散发射

对于类别A基站，任何杂散发射的功率不应超过TS 38.141-2 [2]表6.7.5.2.5.2.2-1中的限值。对于类别B基站，任何杂散发射的功率不应超过TS 38.141-2 [2]表6.7.5.2.5.2.3-1中的限值。

**Table 6.7.5.2.5.2-1: General OTA BS transmitter spurious emission limits for BS type 2-O**

Spurious frequency range	Test limit	Measurement bandwidth	Notes
30 MHz – 1 GHz	-13 dBm	100 kHz	Note 1
1 GHz – min(2 <sup>nd</sup> harmonic of the upper frequency edge of the DL operating band in GHz; 60 GHz)		1 MHz	Note 1, Note 2

NOTE 1: Measurement bandwidth as in ITU-R SM.329 [5], s4.1.

NOTE 2: Upper frequency as in ITU-R SM.329 [5], s2.5 Table 1.

**Table 6.7.5.2.5.2.3-1: BS radiated Tx spurious emission limits in FR2 (Category B)**

Frequency range (Note 4)	Test limit	Measurement Bandwidth	Note
30 MHz ↔ 1 GHz	-36 dBm	100 kHz	Note 1
1 GHz ↔ 18 GHz	-30 dBm	1 MHz	Note 1
18 GHz ↔ $F_{\text{step},1}$	-20 dBm	10 MHz	Note 2
$F_{\text{step},1}$ ↔ $F_{\text{step},2}$	-15 dBm	10 MHz	Note 2
$F_{\text{step},2}$ ↔ $F_{\text{step},3}$	-10 dBm	10 MHz	Note 2
$F_{\text{step},4}$ ↔ $F_{\text{step},5}$	-10 dBm	10 MHz	Note 2
$F_{\text{step},5}$ ↔ $F_{\text{step},6}$	-15 dBm	10 MHz	Note 2
$F_{\text{step},6}$ ↔ min(2 <sup>nd</sup> harmonic of the upper frequency edge of the DL operating band in GHz; 60 GHz)	-20 dBm	10 MHz	Note 2, Note 3

NOTE 1: Bandwidth as in ITU-R SM.329 [5], s4.1

NOTE 2: Limit and bandwidth as in ERC Recommendation 74-01 [26], annex 2.

NOTE 3: Upper frequency as in ITU-R SM.329 [5], s2.5 Table 1.

NOTE 4: The step frequencies  $F_{\text{step},X}$  are defined in Table 6.7.5.2.5.2.3-2.

#### 4.4.3 保护自己或不同基站的基站接收机

本要求应适用于NR FDD操作，以便防止自己的接收机或同一频段的不同基站的接收机因1-O型基站的发射而降低灵敏度。

本要求是在TS 38.104 [6]第4.9节中定义的同址并置要求。如TS 38.141-2 [2]第4.12.2节所述，功率电平在CLTA输出端上规定。

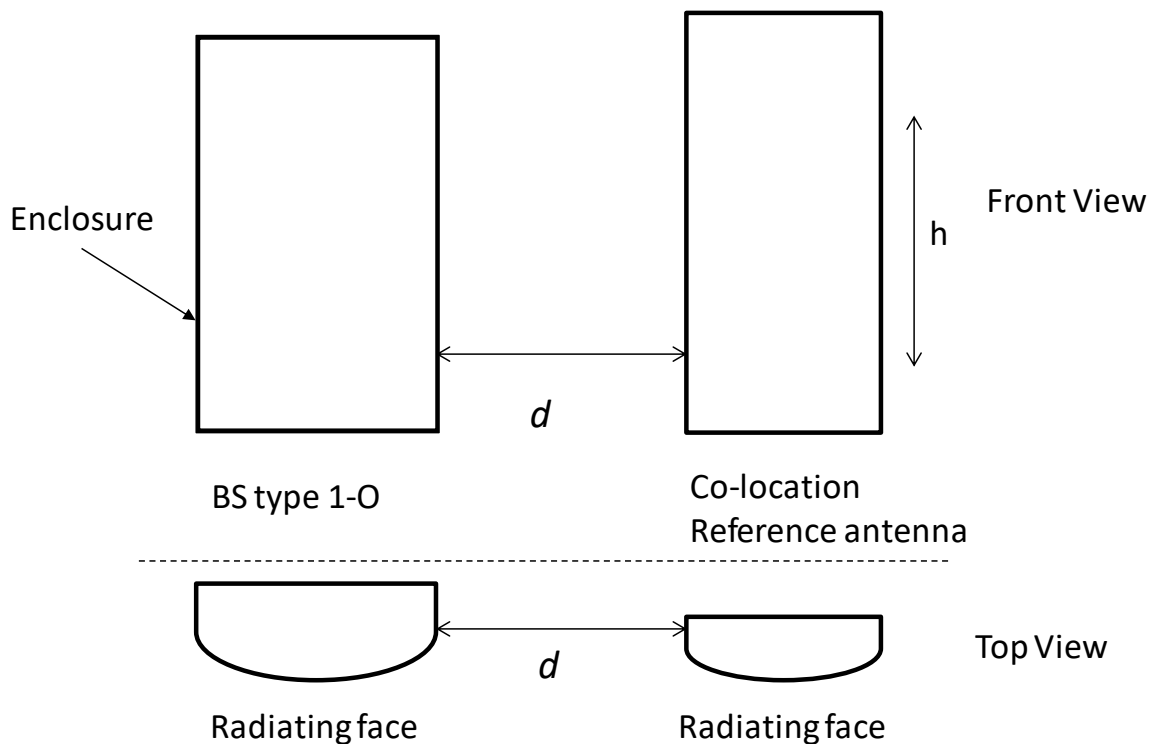
#### 4.9 OTA co-location with other base stations

Co-location requirements are requirements which are based on assuming the *BS type I-O* is co-located with another BS of the same base station class, they ensure that both co-located systems can operate with minimal degradation to each other.

Unwanted emission and out of band blocking co-location requirements are optional requirements based on declaration. TX OFF and TX IMD are mandatory requirements and have the form of a co-location requirement as it represents the worst-case scenario of all the interference cases.

NOTE: Due to the low level of the unwanted emissions for the spurious emissions and TX OFF level co-location is the most suitable method to show conformance.

The *co-location reference antenna* shall be a single column passive antenna which has the same vertical radiating dimension ( $h$ ), frequency range, polarization, as the composite antenna of the *BS type I-O* and nominal  $65^\circ$  horizontal half-power beamwidth (suitable for 3-sector deployment) and is placed at a distance  $d$  from the edge of the *BS type I-O*, as shown in Figure 4.9-1.

Figure 4.9-1: Illustration of *BS type 1-O* enclosure and co-location reference antenna

Edge-to-edge separation  $d$  between the *BS type 1-O* and the *co-location reference antenna* shall be set to 0.1 m.

The *BS type 1-O* and the *co-location reference antenna* shall be aligned in a common plane perpendicular to the mechanical bore-sight direction, as shown in Figure 4.9-1.

The *co-location reference antenna* and the *BS type 1-O* can have different width.

The vertical radiating regions of the *co-location reference antenna* and the *BS type 1-O* composite antenna shall be aligned.

For co-location requirements where the frequency range of the signal at the *co-location reference antenna* is different from the *BS type 1-O*, a *co-location reference antenna* suitable for the frequency stated in the requirement is assumed.

OTA co-location requirements are based on the power at the conducted interface of a *co-location reference antenna*, depending on the requirement this interface is either an input or an output. For *BS type 1-O* with dual polarization the *co-location reference antenna* has two conducted interfaces each representing one polarization.

## 4.12.2 Co-location test antenna

### 4.12.2.1 General

Co-location requirements are specified as power levels into or out of the conducted interface of the *co-location reference antenna*. For conformance testing the requirements are translated to the input or output of a *co-location test antenna* (CLTA).

A CLTA is a practical antenna which can be used to test conformance to the co-location requirements.

### 4.12.2.2 Co-location test antenna characteristics

A *co-location test antenna* is a practical passive antenna that is used for conformance testing of the co-location requirements and is based on the definition of the *co-location reference antenna*. A CLTA shall comply with the requirements specified in Table 4.12.2.2-1.

Translation of the requirements to other test antennas are not precluded but suitable translations between the co-location reference antenna and test antenna must be provided to demonstrate that the method is within the specified MU.

NOTE: The currently defined CLTAs are suitable for testing *BS type 1-O* implemented with a planar antenna array. The method for testing BS with other antenna array implementations is not covered by the present release of this specification.

**Table 4.12.2.2-1: CLTA characteristics**

Parameter	In-band CLTA	Out-of-band CLTAs
Vertical radiating dimension (h)	Test object vertical radiating length $\pm 30\%$	Test object vertical radiating length $\pm 30\%$ (Note 2)
Horizontal beam width	$65^\circ \pm 10^\circ$	$65^\circ \pm 10^\circ$
Vertical beam width	N/A	The half-power vertical beam width of the CLTA equals the narrowest declared (D.3) vertical beamwidth $\pm 3^\circ$ (Note 2)
Polarization (Note 3)	Match (Note 4)	Match to in-band (Note 4)
Conducted interface return loss	$> 10$ dB	$> 10$ dB

NOTE 1: If a multi-column or multi-band antenna is used the column closest to the NR BS shall be selected while other columns are terminated during testing.

NOTE 2: The vertical radiating dimension definition shall be used instead of the vertical beam width definition when the test chamber dimensions limit the use of vertical beam width definition. Otherwise the vertical beam width definition shall be used.

NOTE 3: For *BS type 1-O* with dual polarization the CLTA has two conducted interfaces each representing one polarization.

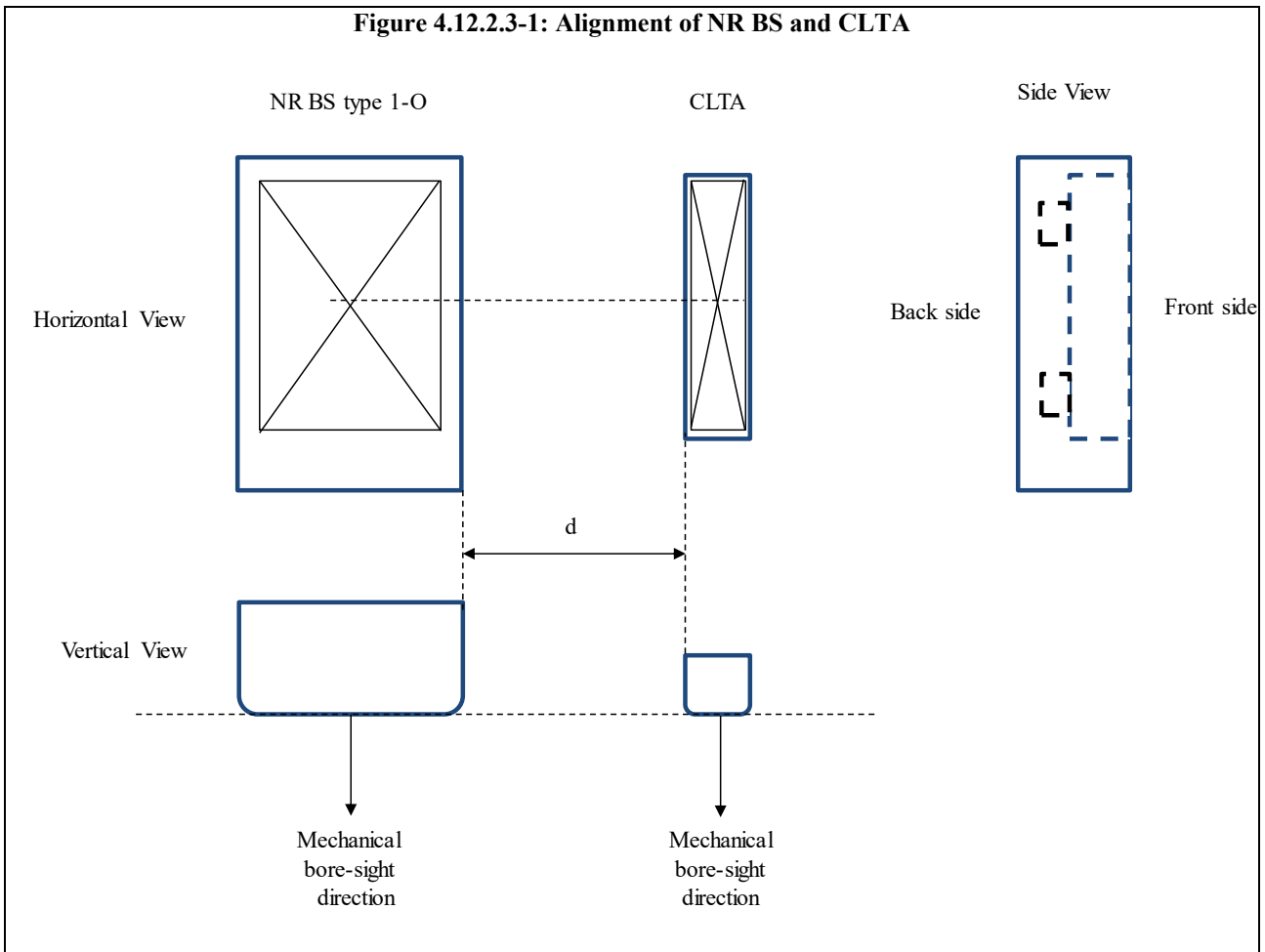
NOTE 4: Matched to the polarization of EUT antenna.

#### 4.12.2.3 Co-location test antenna alignment

The alignment between the NR BS under test and the *co-location test antenna* is described in Table 4.12.2.3-1 and Figure 4.12.2.3-1. The same physical alignment applies to in-band and out-of-band co-location requirements.

**Table 4.12.2.3-1: CLTA alignment tolerances**

Parameter	
Edge-to-edge separation between the NR BS and the CLTA, d	$0.1 \text{ m} \pm 0.01 \text{ m}$
Vertical alignment	Centre $\pm 0.01 \text{ m}$
Front alignment	Radome front $\pm 0.01 \text{ m}$



CLTA连接器输出的两种极化产生的任何杂散发射的总功率都不应超过TS 38.141-2 [2]表6.7.5.3.5.1-1中的限值。

**Table 6.7.5.3.5.1-1: BS type 1-O OTA spurious emissions limits for protection of the BS receiver**

BS class	Frequency range	Maximum Level for bands below 3GHz	Maximum Level for bands between 3 and 4.2GHz	Maximum Level for bands between 4.2 and 6GHz	Measurement bandwidth
Wide Area BS	F <sub>UL_low</sub> – F <sub>UL_high</sub>	-113.9 dBm	-113.7 dBm	-113.6 dBm	100 kHz
Medium Range BS		-108.9 dBm	-108.7 dBm	-108.6 dBm	
Local Area BS		-105.9 dBm	-105.7 dBm	-105.6 dBm	

#### 4.4.4 附加的杂散发射要求

在某些区域，TS 38.141-2 [2]中的以下附加要求可能适用于：

与工作于其他频段的系统共存的基站，要求见表6.7.5.4.5-1。

保护PHS，要求见表6.7.5.4.5-2。

工作于1 432-1 452 MHz内频段n50和n75上以及频段n51和n76上的基站，要求见表6.7.5.4.5-3。

工作于1 492-1 517 MHz内NR频段n50和n75上以及1 492-1 518 MHz内频段n74上的基站，要求见表6.7.5.4.5-4。

工作于频段n13和n14上的基站，用于确保为700 MHz公共安全操作提供适当的干扰保护，要求见表6.7.5.4.5-5。

工作于频段n30上的基站，要求见表6.7.5.4.5-6。

工作于频段n26的基站，用于确保为800 MHz公共安全操作提供适当的干扰保护，要求见表6.7.5.4.5-7。

**Table 6.7.5.4.5-1: BS spurious emissions test limits for BS for co-existence with systems operating in other frequency bands**

System type for NR to co-exist with	Frequency range for co-existence requirement	Test limit	Measurement bandwidth	Notes
GSM900	921-960 MHz	-45.4 dBm	100 kHz	This requirement does not apply to BS operating in band n8.
	876-915 MHz	-49.4 dBm	100 kHz	For the frequency range 880-915 MHz, this requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.7.5.3.
DCS1800	1 805-1 880 MHz	-35.4 dBm	100 kHz	This requirement does not apply to BS operating in band n3.
	1 710-1 785 MHz	-49.4 dBm	100 kHz	This requirement does not apply to BS operating in band n3, since it is already covered by the requirement in clause 6.7.5.3.
PCS1900	1 930-1 990 MHz	-35.4 dBm	100 kHz	This requirement does not apply to BS operating in band n2, n25 or band n70.
	1 850-1 910 MHz	-49.4 dBm	100 kHz	This requirement does not apply to BS operating in band n2 or n25 since it is already covered by the requirement in clause 6.7.5.3.
GSM850 or CDMA850	869-894 MHz	-45.4 dBm	100 kHz	This requirement does not apply to BS operating in band n5 or n26.
	824-849 MHz	-49.4 dBm	100 kHz	This requirement does not apply to BS operating in band n5 or n26, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band I or E-UTRA Band 1 or NR Band n1	2 110-2 170 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n1 or n65.
	1 920-1 980 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n1 or n65, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band II or E-UTRA Band 2 or NR Band n2	1 930-1 990 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n2 or n70.
	1 850-1 910 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n2, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band III or E-UTRA Band 3 or NR Band n3	1 805-1 880 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n3.
	1 710-1 785 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n3, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band IV or E-UTRA Band 4	2 110-2 155 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n66.
	1 710-1 755 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n66, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band V or	869-894 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n5 or n26.

E-UTRA Band 5 or NR Band n5	824-849 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n5 or n26, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band VI, XIX or E-UTRA Band 6, 18, 19	860-890 MHz	-40.4 dBm	1 MHz	
	815-830 MHz	-37.4 dBm	1 MHz	
	830-845 MHz	-37.4 dBm	1 MHz	
UTRA FDD Band VII or E-UTRA Band 7 or NR Band n7	2 620-2 690 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n7.
	2 500-2 570 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n7, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band VIII or E-UTRA Band 8 or NR Band n8	925-960 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n8.
	880-915 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band IX or E-UTRA Band 9	1 844.9-1 879.9 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n3.
	1 749.9-1 784.9 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n3, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band X or E-UTRA Band 10	2 110-2 170 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n66
	1 710-1 770 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n66, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band XI or XXI or E-UTRA Band 11 or 21	1 475.9-1 510.9 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n74 or n75.
	1 427.9-1 447.9 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75 or n76.
	1 447.9-1 462.9 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n74 or n75.
UTRA FDD Band XII or E-UTRA Band 12 or NR Band n12	729-746 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n12 or n85.
	699-716 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n12 or n85, since it is already covered by the requirement in clause 6.7.5.3. For NR BS operating in n29, it applies 1 MHz below the Band n29 downlink operating band (Note 5).
UTRA FDD Band XIII or E-UTRA Band 13 or NR Band n13	746-756 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n13.
	777-787 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n13, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band XIV or E-UTRA Band 14 or NR Band n14	758-768 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n14.
	788-798 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n14, since it is already covered by the requirement in clause 6.7.5.3.
E-UTRA Band 17	734-746 MHz	-40.4 dBm	1 MHz	
	704-716 MHz	-37.4 dBm	1 MHz	For NR BS operating in n29, it applies 1 MHz below the Band n29 downlink operating band (Note 5).
UTRA FDD Band XX or E-UTRA Band 20 or NR Band n20	791-821 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n20 or n28.
	832-862 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n20, since it is already covered by the requirement in clause 6.7.5.3.
UTRA FDD Band XXII or E-UTRA Band 22	3 510-3 590 MHz	-40 dBm	1 MHz	This requirement does not apply to BS operating in Band n77 or n78.
	3 410-3 490 MHz	-37 dBm	1 MHz	This requirement does not apply to BS operating in Band n77 or n78.

E-UTRA Band 24 or NR Band n24	1 525-1 559 MHz	-40.4 dBm	1 MHz	
	1 626.5-1 660.5 MHz	-37.4 dBm	1 MHz	
UTRA FDD Band XXV or E-UTRA Band 25 or NR band n25	1 930-1 995 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n2, n25 or n70.
	1 850-1 915 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n25 since it is already covered by the requirement in clause 6.7.5.3. For BS operating in Band n2, it applies for 1910 MHz to 1915 MHz, while the rest is covered in clause 6.7.5.3.
UTRA FDD Band XXVI or E-UTRA Band 26 or NR Band n26	859-894 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n5 or n26.
	814-849 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n26 since it is already covered by the requirement in clause 6.7.5.3. For BS operating in Band n5, it applies for 814 MHz to 824 MHz, while the rest is covered in clause 6.7.5.3.
E-UTRA Band 27	852-869 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n5.
	807-824 MHz	-37.4 dBm	1 MHz	This requirement also applies to BS operating in Band n28, starting 4 MHz above the Band n28 downlink <i>operating band</i> (Note 5).
E-UTRA Band 28 or NR Band n28	758-803 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n20, n67 or n28.
	703-748 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n28, since it is already covered by the requirement in clause 6.7.5.3. For BS operating in band n67, it applies for 703 MHz to 736 MHz.
E-UTRA Band 29 or NR Band n29	717-728 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n29 or n85.
E-UTRA Band 30 or NR Band n30	2 350-2 360 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n30.
	2 305-2 315 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n30, since it is already covered by the requirement in clause 6.7.5.3.
E-UTRA Band 31	462.5-467.5 MHz	-40.4 dBm	1 MHz	
	452.5-457.5 MHz	-37.4 dBm	1 MHz	
UTRA FDD band XXXII or E-UTRA band 32	1 452-1 496 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n74 or n75.
UTRA TDD Band a) or E-UTRA Band 33	1 900-1 920 MHz	-40.4 dBm	1 MHz	
UTRA TDD Band a) or E-UTRA Band 34 or NR band n34	2 010-2 025 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n34.
UTRA TDD Band b) or E-UTRA Band 35	1 850-1 910 MHz	-40.4 dBm	1 MHz	
UTRA TDD Band b) or E-UTRA Band 36	1 930-1 990 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n2 or n25.
UTRA TDD Band c) or E-UTRA Band 37	1 910-1 930 MHz	-40.4 dBm	1 MHz	
UTRA TDD Band d) or E-	2 570-2 620 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n38.

UTRA Band 38 or NR Band n38				
UTRA TDD Band f) or E-UTRA Band 39 or NR band n39	1 880-1 920 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n39.
UTRA TDD Band e) or E-UTRA Band 40 or NR Band n40	2 300-2 400 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Bands n30 or n40.
E-UTRA Band 41 or NR Band n41	2 496-2 690 MHz	-40.4 dBm	1 MHz	This is not applicable to BS operating in Band n41.
E-UTRA Band 42	3 400-3 600 MHz	-40 dBm	1 MHz	This requirement does not apply to BS operating in Band n77 or n78.
E-UTRA Band 43	3 600-3 800 MHz	-40 dBm	1 MHz	This requirement does not apply to BS operating in Band n77 or n78.
E-UTRA Band 44	703-803 MHz	-40.4 dBm	1 MHz	This is not applicable to BS operating in Band n28.
E-UTRA Band 45	1 447-1 467 MHz	-40.4 dBm	1 MHz	
E-UTRA Band 47	5 855-5 925 MHz	-39.5 dBm	1 MHz	
E-UTRA Band 48	3 550-3 700 MHz	-40 dBm	1 MHz	This requirement does not apply to BS operating in Band n77 or n78.
E-UTRA Band 50 or NR Band n50	1 432-1 517 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75 or n76.
E-UTRA Band 51 or NR Band n51	1 427-1 432 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n75 or n76.
E-UTRA Band 53 or NR Band n53	2 483.5-2 495 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n41 or n90.
E-UTRA Band 65 or NR Band n65	2 110-2 200 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n1 or n65.
	1 920-2 010 MHz	-37.4 dBm	1 MHz	For BS operating in Band n1, it applies for 1980 MHz to 2010 MHz, while the rest is covered in clause 6.7.5.3. This requirement does not apply to BS operating in band n65, since it is already covered by the requirement in clause 6.7.5.3.
E-UTRA Band 66 or NR Band n66	2 110-2 200 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n66.
	1 710-1 780 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n66, since it is already covered by the requirement in clause 6.7.5.3.
E-UTRA Band 67 or NR Band n67	738-758 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n28 or n67.
E-UTRA Band 68	753-783 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n28.
	698-728 MHz	-37.4 dBm	1 MHz	For BS operating in Band n28, this requirement applies between 698 MHz and 703 MHz, while the rest is covered in clause 6.7.5.3.
E-UTRA Band 69	2 570-2 620 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n38.
E-UTRA Band 70 or NR Band n70	1 995-2 020 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n2, n25 or n70
	1 695-1 710 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n70, since it is already covered by the requirement in clause 6.7.5.3.
E-UTRA Band 71 or	617-652 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n71

NR Band n71	663-698 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n71, since it is already covered by the requirement in clause 6.7.5.3.
E-UTRA Band 72	461-466 MHz	-40.4 dBm	1 MHz	
	451-456 MHz	-37.4 dBm	1 MHz	
E-UTRA Band 74 or NR Band n74	1 475-1 518 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n74 or n75.
	1 427-1 470 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75 or n76.
E-UTRA Band 75 or NR Band n75	1 432-1 517 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75 or n76.
E-UTRA Band 76 or NR Band n76	1 427-1 432 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n75 or n76.
NR Band n77	3.3-4.2 GHz	-40 dBm	1 MHz	This requirement does not apply to BS operating in Band n77 or n78
NR Band n78	3.3-3.8 GHz	-40 dBm	1 MHz	This requirement does not apply to BS operating in Band n77 or n78
NR Band n79	4.4-5.0 GHz	-39.5 dBm	1 MHz	This requirement does not apply to BS operating in Band n79
NR Band n80	1 710-1 785 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n3, since it is already covered by the requirement in clause 6.7.5.3.
NR Band n81	880-915 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.7.5.3.
NR Band n82	832-862 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n20, since it is already covered by the requirement in clause 6.7.5.3.
NR Band n83	703-748 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n28, since it is already covered by the requirement in clause 6.7.5.3.
NR Band n84	1 920-1 980 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n1, since it is already covered by the requirement in clause 6.7.5.3.
E-UTRA Band 85 or NR Band n85	728-746 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in band n12 or n85.
	698-716 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n12 or n85, since it is already covered by the requirement in clause 6.7.5.3. For NR BS operating in n29, it applies 1 MHz below the Band n29 downlink operating band (Note 5).
NR Band n86	1 710-1 780 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n66, since it is already covered by the requirement in clause 6.7.5.3.
NR Band n89	824-849 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n5, since it is already covered by the requirement in clause 6.7.5.3.
NR Band n91	1 427-1 432 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n75 or n76.
	832-862 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n20, since it is already covered by the requirement in clause 6.7.5.3.
NR Band n92	1 432-1 517 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75 or n76.
	832-862 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n20, since it is already covered by the requirement in clause 6.7.5.3.
NR Band n93	1 427-1 432 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n75 or n76.
	880-915 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.7.5.3.
NR Band n94	1 432-1 517 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n50, n51, n74, n75 or n76.

	880-915 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.7.5.3.
NR Band n95	2 010-2 025 MHz	-40.4 dBm	1 MHz	
NR Band n96	5 925-7 125 MHz	-39.5 dBm	1 MHz	This requirement does not apply to BS operating in Band n96 or n102.
NR Band n97	2 300-2 400 MHz	-40.4 dBm	1 MHz	NR Band n97
NR Band n98	1 880-1 920 MHz	-40.4 dBm	1 MHz	
NR Band n99	1 626.5-1 660.5 MHz	-37.4 dBm	1 MHz	This requirement does not apply to BS operating in band n24, since it is already covered by the requirement in clause 6.7.5.3.
NR Band n100	919.4-925 MHz	-40.4 dBm	1 MHz	This requirement does not apply to BS operating in Band n8.
	874.4-880 MHz	-37.4 dBm	1MHz	
NR Band n101	1 900-1 910 MHz	-40.4 dBm	1 MHz	
NR Band n102	6 425-7 125 MHz	-39.5 dBm	1 MHz	This requirement does not apply to BS operating in Band n96 or n102.
E-UTRA Band 103	757-758 MHz	-40.4 dBm	1 MHz	
	787-788 MHz	-37.4 dBm	1 MHz	

NOTE 1: As defined in the scope for spurious emissions in this clause, except for the cases where the noted requirements apply to a BS operating in Band n28, the co-existence requirements in 6.7.5.4.5-1 do not apply for the  $\Delta f_{\text{OBUe}}$  frequency range immediately outside the downlink *operating band* (see TS 38.104 [2], Table 5.2-1). Emission limits for this excluded frequency range may be covered by local or regional requirements.

NOTE 2: Table 6.7.5.4.5-1 assumes that two *operating bands*, where the frequency ranges in TS 38.104 [2] Table 5.2-1 would be overlapping, are not deployed in the same geographical area. For such a case of operation with overlapping frequency arrangements in the same geographical area, special co-existence requirements may apply that are not covered by the 3GPP specifications.

NOTE 3: TDD base stations deployed in the same geographical area, that are synchronized and use the same or adjacent *operating bands* can transmit without additional co-existence requirements. For unsynchronized base stations, special co-existence requirements may apply that are not covered by the 3GPP specifications.

NOTE 4: For NR Band n28 BS, specific solutions may be required to fulfil the spurious emissions limits for BS for co-existence with E-UTRA Band 27 UL *operating band*.

NOTE 5: For NR Band n29 BS, specific solutions may be required to fulfil the spurious emissions limits for NR BS for co-existence with UTRA Band XII, E-UTRA Band 12 or NR Band n12 UL *operating band*, E-UTRA Band 17 UL *operating band* or E-UTRA Band 85 UL or NR Band n85 UL *operating band*.

**Table 6.7.5.4.5-2: BS spurious emissions test limits for BS for co-existence with PHS**

Frequency range	Test limit	Measurement bandwidth	Note
1 884.5-1 915.7 MHz	-32 dBm	300 kHz	Applicable when co-existence with PHS system operating in 1 884.5-1 915.7 MHz

**Table 6.7.5.4.5-3: Additional emission test limit for BS operating in Band n50 and n75 within 1432-1452 MHz, and in Band n51 and n76**

Filter centre frequency, $F_{\text{filter}}$	Test limit (dBm)	Measurement bandwidth
$F_{\text{filter}} = 1\ 413.5\ \text{MHz}$	-42	27 MHz

**Table 6.7.5.4.5-4: Operating band n50, n74 and n75 emission test limits above 1518 MHz**

Filter centre frequency, $F_{\text{filter}}$	EIRP limit (dBm)	Measurement bandwidth
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$1\ 518.5\ \text{MHz} \leq F_{\text{filter}} \leq 1\ 519.5\ \text{MHz}$	-0.8	1 MHz
$1\ 520.5\ \text{MHz} \leq F_{\text{filter}} \leq 1\ 558.5\ \text{MHz}$	-30	1 MHz

**Table 6.7.5.4.5-5: BS Spurious emissions limits for protection of 700 MHz public safety operations**

Operating Band	Frequency range	Maximum Level	Measurement Bandwidth
n13	763-775 MHz	-37 dBm	6.25 kHz
n13	793-805 MHz	-37 dBm	6.25 kHz
n14	769-775 MHz	-37 dBm	6.25 kHz
n14	799-805 MHz	-37 dBm	6.25 kHz

**Table 6.7.5.4.5-6: Additional NR BS Spurious emissions limits for Band n30**

Frequency range	Basic limit	Measurement bandwidth
2 200-2 345 MHz	-33.4 dBm	1 MHz
2 362.5-2 365 MHz	-13.4 dBm	
2 365-2 367.5 MHz	-28.4 dBm	
2 367.5-2 370 MHz	-30.4 dBm	
2 370-2 395 MHz	-33.4 dBm	

**Table 6.7.5.4.5-7: BS OTA Spurious emissions limits for protection of 800 MHz public safety operations**

Operating Band	Frequency range	Maximum Level	Measurement Bandwidth	Note
n26	851-859 MHz	-4 dBm	100 kHz	Applicable for offsets > 37.5 kHz from the channel edge

**Table 6.7.5.4.5-8: Additional BS Spurious emissions limits for Band n41 and n90**

Frequency range	Test limit	Measurement Bandwidth
2 505-2 535 MHz	-33 dBm	1 MHz

NOTE: This requirement applies for carriers allocated within 2 545-2 645 MHz.

以下附加要求应适用于：

工作于频率范围24.25-27.5 GHz的基站，用于保护卫星地球探测业务，要求见 TS 38.141-2 [2]表6.7.5.4.5.2-1。

**Table 6.7.5.4.5.2-1: BS spurious emissions test limits for protection of Earth Exploration Satellite Service**

Frequency range	Limit	Measurement Bandwidth	Note
23.6-24 GHz	-3 dBm	200 MHz	Note 1
23.6-24 GHz	-9 dBm	200 MHz	Note 2

NOTE 1: This limit applies to BS brought into use on or before 1 September 2027.

NOTE 2: This limit applies to BS brought into use after 1 September 2027.

#### 4.4.5 同址并置要求

当GSM900、DCS1800、PCS1900、GSM850、CDMA850、UTRA FDD、UTRA TDD、E-UTRA和/或NR基站与一个基站同址并置时，这些要求可能适用于保护其他基站接收机。

这些要求假设与相同类别的基站同址并置。

注 – 对于与UTRA的同址并置，要求基于与UTRA FDD或TDD基站的同址并置。

本要求是如TS 38.104 [6]第4.9节中定义的同址并置要求。如TS 38.141-2 [2]第4.12.2节所述，功率电平在CLTA输出端上规定。

任何杂散发射的CLTA输出都不应超过TS 38.141-2 [2]表6.7.5.5.1-1中的测试限值。

对于多频段RIB，表6.7.5.5.1-1注释栏中的排除和条件适用于每个支持的工作频段。

Table 6.7.5.5.1-1: BS type 1-O OTA spurious emissions limits for BS co-located with another BS

Type of co-located BS	Frequency range for co-location requirement	Test limit			Measurement bandwidth	Note
		WA BS	MR BS	LA BS		
GSM900	876-915 MHz	-115.9 dBm	-108.9 dBm	-87.9 dBm	100 kHz	
DCS1800	1 710-1 785 MHz	-115.9 dBm	-108.9 dBm	-97.9 dBm	100 kHz	
PCS1900	1 850-1 910 MHz	-115.9 dBm	-108.9 dBm	-97.9 dBm	100 kHz	
GSM850 or CDMA850	824-849 MHz	-115.9 dBm	-108.9 dBm	-87.9 dBm	100 kHz	
UTRA FDD Band I or E-UTRA Band 1 or NR Band n1	1 920-1 980 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band II or E-UTRA Band 2 or NR Band n2	1 850-1 910 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band III or E-UTRA Band 3 or NR Band n3	1 710-1 785 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band IV or E-UTRA Band 4	1 710-1 755 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band V or E-UTRA Band 5 or NR Band n5	824-849 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band VI, XIX or E-UTRA Band 6, 19	830-845 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band VII or E-UTRA Band 7 or NR Band n7	2 500-2 570 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band VIII or E-UTRA Band 8 or NR Band n8	880-915 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band IX or E-UTRA Band 9	1 749.9-1 784.9 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band X or E-UTRA Band 10	1 710-1 770 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band XI or E-UTRA Band 11	1 427.9-1 447.9 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	This is not applicable to BS operating in Band n50 or n75
UTRA FDD Band XII or E-UTRA Band 12	699-716 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band XIII or E-UTRA Band 13 or NR Band n13	777-787 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band XIV or E-UTRA Band 14 or NR Band n14	788-798 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 17	704-716 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 18	815-830 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band XX or E-UTRA Band 20 or NR Band n20	832-862 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band XXI or E-UTRA Band 21	1 447.9-1 462.9 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	This is not applicable to BS operating in Band n50 or n75
UTRA FDD Band XXII or E-UTRA Band 22	3 410-3 490 MHz	-113.7 dBm	-108.7 dBm	-105.7 dBm	100 kHz	This is not applicable to BS operating in Band n77 or n78
E-UTRA Band 24 or NR Band n24	1 626.5-1 660.5 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA FDD Band XXV or E-UTRA Band 25	1 850-1 915 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	

UTRA FDD Band XXVI or E-UTRA Band 26 or NR Band n26	814-849 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 27	807-824 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 28 or NR Band n28	703-748 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 30 or NR Band n30	2 305-2 315 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 31	452.5-457.5 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA TDD Band a) or E- UTRA Band 33	1 900-1 920 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA TDD Band a) or E- UTRA Band 34	2 010-2 025 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA TDD Band b) or E- UTRA Band 35	1 850-1 910 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA TDD Band b) or E- UTRA Band 36	1 930-1 990 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	This is not applicable to BS operating in Band n2
UTRA TDD Band c) or E- UTRA Band 37	1 910-1 930 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA TDD Band d) or E- UTRA Band 38 or NR Band n38	2 570-2 620 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	This is not applicable to BS operating in Band n38.
UTRA TDD Band f) or E- UTRA Band 39	1 880-1 920 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
UTRA TDD Band e) or E- UTRA Band 40	2 300-2 400 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 41 or NR Band n41	2 496-2 690 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	This is not applicable to BS operating in Band n41
E-UTRA Band 42	3 400-3 600 MHz	-113.7 dBm	-108.7 dBm	-105.7 dBm	100 kHz	This is not applicable to BS operating in Band n77 or n78
E-UTRA Band 43	3 600-3 800 MHz	-113.7 dBm	-108.7 dBm	-105.7 dBm	100 kHz	This is not applicable to BS operating in Band n77 or n78
E-UTRA Band 44	703-803 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	This is not applicable to BS operating in Band n28
E-UTRA Band 45	1 447-1 467 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 48	3 550-3 700 MHz	-113.7 dBm	-108.7 dBm	-105.7 dBm	100 kHz	This is not applicable to BS operating in Band n77 or n78
E-UTRA Band 50 or NR Band n50	1 432-1 517 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	This is not applicable to BS operating in Band n74 or n75
E-UTRA Band 51 or NR Band n51	1 427-1 432 MHz	N/A	N/A	-105.9 dBm	100 kHz	This is not applicable to BS operating in Band n50, n75 or n76
E-UTRA Band 53 or NR Band n53	2 483.5-2 495 MHz	N/A	-108.9 dBm	-105.9 dBm	100 kHz	This is not applicable to BS operating in Band n41 or n90
E-UTRA Band 65 or NR Band n65	1 920-2 010 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 66 or NR Band n66	1 710-1 780 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	

E-UTRA Band 68	698-728 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 70 or NR Band n70	1 695-1 710 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 71 or NR Band n71	663-698 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 72	451-456 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 74 or NR Band n74	1 427-1 470 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	This is not applicable to BS operating in Band n50
NR Band n77	3.3-4.2 GHz	-113.7 dBm	-108.7 dBm	-105.7 dBm	100 kHz	This is not applicable to BS operating in Band n77 or n78
NR Band n78	3.3-3.8 GHz	-113.7 dBm	-108.7 dBm	-105.7 dBm	100 kHz	This is not applicable to BS operating in Band n77 or n78
NR Band n79	4.4-5.0 GHz	-113.6 dBm	-108.6 dBm	-105.6 dBm	100 kHz	
NR Band n80	1 710-1 785 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
NR Band n81	880-915 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
NR Band n82	832-862 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
NR Band n83	703-748 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
NR Band n84	1 920-1 980 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
E-UTRA Band 85 or NR Band n85	698-716 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
NR Band n86	1 710-1 780 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
NR Band n89	824-849 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
NR Band n95	2 010-2 025 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
NR Band 96	5 925-7 125 MHz	N/A	-107.6 dBm	-104.6 dBm	100 kHz	This is not applicable to BS operating in Band n96 or n102
NR Band n97	2 300-2 400 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
NR Band n98	1 880-1 920 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
NR Band n99	1 626.5-1 660.5 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	
NR band n100	874.4-880 MHz	-113.9 dBm	NA	NA	100 kHz	
NR band n101	1 900-1 910 MHz	-113.9 dBm	NA	NA	100 kHz	
NR Band n102	6 425-7 125 MHz	N/A	-107.6 dBm	-104.6 dBm	100 kHz	This is not applicable to BS operating in Band n96 or n102
E-UTRA Band 103	787-788 MHz	-113.9 dBm	-108.9 dBm	-105.9 dBm	100 kHz	

NOTE 1: As defined in the scope for spurious emissions in this clause, the co-location requirements in Table 6.7.5.5.1-1 do not apply for the frequency range extending  $\Delta f_{\text{OBUe}}$  immediately outside the BS transmit frequency range of a downlink *operating band* (see Table 5.2-1 in TS 38.104 [2]). The current state-of-the-art technology does not allow a single generic solution for co-location with other system on adjacent frequencies for 30 dB BS-BS minimum coupling loss. However, there are certain site-engineering solutions that can be used. These techniques are addressed in TR 25.942 [27].

NOTE 2: Table 6.7.5.5.1-1 assumes that two *operating bands*, where the corresponding BS transmit and receive frequency ranges in Table 5.2-1 in TS 38.104 [2] would be overlapping, are not deployed in the same geographical area. For such a case of operation with overlapping frequency arrangements in the same geographical area, special co-location requirements may apply that are not covered by the 3GPP specifications.

NOTE 3: Co-located TDD base stations that are synchronized and using the same or adjacent *operating band* can transmit without special co-locations requirements. For unsynchronized base station), special co-location requirements may apply that are not covered by the 3GPP specifications.

## 4.5 OTA接收机杂散发射

### 4.5.1 1-O型基站的OTA接收机杂散发射

RIB接口处的1-O型基站的接收机杂散发射应低于TS 38.141-2 [2]表7.7.5.1-1中定义的适用限值。

**Table 7.7.5.1-1: General OTA BS receiver spurious emission limits for BS type 1-O**

Spurious frequency range	Test limits (Note 6, Note 8)	Measurement bandwidth	Notes
30 MHz – 1 GHz	$-36 + X$ dBm	100 kHz	Note 1, Note 6
1 GHz – 6 GHz	$-30 + X$ dBm	1 MHz	Note 1, Note 2, Note 6
12.75 GHz – 5 <sup>th</sup> harmonic of the upper frequency edge of the UL <i>operating band</i> in GHz	$-30 + X$ dBm	1 MHz	Note 1, Note 2, Note 3, Note 6

NOTE 1: Measurement bandwidths as in ITU-R SM.329 [5], s4.1.

NOTE 2: Upper frequency as in ITU-R SM.329 [5], s2.5 Table 1.

NOTE 3: This spurious frequency range applies only for *operating bands* for which the 5<sup>th</sup> harmonic of the upper frequency edge of the UL *operating band* is reaching beyond 12.75 GHz.

NOTE 4: The frequency range from  $\Delta f_{\text{OBUE}}$  below the lowest frequency of the BS transmitter operating band to  $\Delta f_{\text{OBUE}}$  above the highest frequency of the BS transmitter *operating band* may be excluded from the requirement.  $\Delta f_{\text{OBUE}}$  is defined in clause 6.7.1. For *multi-band RIBs*, the exclusion applies for all supported *operating bands*.

NOTE 5: Void.

NOTE 6:  $X = 9$  dB, unless stated differently in regional regulation.

NOTE 7: Void.

NOTE 8: Additional limits may apply regionally.

### 4.5.2 2-O型基站的OTA接收机杂散发射

RIB接口处的2-O型基站的接收机杂散发射应低于TS 38.141-2 [2]表7.7.5.2-1中定义的适用限值，在TS 38.141-2 [2]表7.7.5.2-2中定义了步进频率。此外，保护卫星地球探测业务的要求应适用于工作于频率范围24.25-27.5 GHz的基站，如TS 38.141-2 [2]表7.7.5.2-3中所定义。

**Table 7.7.5.2-1: Radiated Rx spurious emission limits for BS type 2-O**

Spurious frequency range (Note 4)	Limit (Note 5)	Measurement Bandwidth	Note
30 MHz ↔ 1 GHz	-36 dBm	100 kHz	Note 1
1 GHz ↔ 18 GHz	-30 dBm	1 MHz	Note 1
18 GHz ↔ $F_{\text{step},1}$	-20 dBm	10 MHz	Note 2
$F_{\text{step},1}$ ↔ $F_{\text{step},2}$	-15 dBm	10 MHz	Note 2
$F_{\text{step},2}$ ↔ $F_{\text{step},3}$	-10 dBm	10 MHz	Note 2
$F_{\text{step},4}$ ↔ $F_{\text{step},5}$	-10 dBm	10 MHz	Note 2
$F_{\text{step},5}$ ↔ $F_{\text{step},6}$	-15 dBm	10 MHz	Note 2
$F_{\text{step},6}$ ↔ min(2 <sup>nd</sup> harmonic of the upper frequency edge of the UL operating band in GHz; 60 GHz)	-20 dBm	10 MHz	Note 2, Note 3

NOTE 1: Bandwidth as in ITU-R SM.329 [2], s4.1.

NOTE 2: Limit and bandwidth as in ERC Recommendation 74-01 [19], Annex 2.

NOTE 3: Upper frequency as in ITU-R SM.329 [2], s2.5 Table 1.

NOTE 4: The step frequencies  $F_{\text{step},X}$  are defined in Table 7.7.5.2-2.

NOTE 5: Additional limits may apply regionally.

**Table 7.7.5.2-2: Step frequencies for defining the radiated Rx spurious emission limits for BS type 2-O**

Operating band	$F_{\text{step},1}$ (GHz)	$F_{\text{step},2}$ (GHz)	$F_{\text{step},3}$ (GHz)	$F_{\text{step},4}$ (GHz)	$F_{\text{step},5}$ (GHz)	$F_{\text{step},6}$ (GHz)
n257	18	23.5	25	31	32.5	41.5
n258	18	21	22.75	29	30.75	40.5
n259	23.5	35.5	38	45	47.5	59.5
n260	25	34	35.5	41.5	43	52
n261	18	25.5	26.0	29.85	30.35	38.35
n262	37.2	45.2	45.7	49.7	50.2	58.2

**Table 7.7.5.2-3: Limits for protection of Earth Exploration Satellite Service**

Frequency range	Limit	Measurement Bandwidth	Note
23.6 – 24 GHz	-3 dBm	200 MHz	Note 1
23.6 – 24 GHz	-9 dBm	200 MHz	Note 2

NOTE 1: This limit applies to BS brought into use on or before 1 September 2027.

NOTE 2: This limit applies to BS brought into use after 1 September 2027.

## 5 参考文献

- [1] ARIB STD-T120-38.141-1 V17.6.0, ETSI TS 138 141-1 V17.6.0 or TTA TTAT.3G-38.141-1V17.6.0) these standards refer to 3GPP TS 38.141-1 V17.6.0 (2022-06), “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; Base Station (BS) conformance testing Part 1: Conducted conformance testing (Release 17)”.
- [2] ARIB STD-T120-38.141-2 V.17.6.0, ETSI TS 138 141-2 V17.6.0 or TTA TTAT.3G-38.141-2V17.6.0 these standards refer to 3GPP TS 38.141-2 V17.6.0 (2022-06), “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; Base Station (BS) conformance testing Part 2: Radiated conformance testing (Release 17)”.
- [3] Recommendation ITU-R SM.329: “Unwanted emissions in the spurious domain”.
- [4] Recommendation ITU-R M.1545: “Measurement uncertainty as it applies to test limits for the terrestrial component of International Mobile Telecommunications-2000”.
- [5] ARIB STD-T120-38.104 V17.6.0, ETSI TS 138 104-2 V17.6.0 or TTAT.3G-38.104V17.6.0 these standards refer to 3GPP TS 38.104 V17.6.0 (2022-06), “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; Base Station (BS) radio transmission and reception (Release 17)”.

## 附件2的 后附资料1

### 测试容差的定义

#### 测试容差

参照ITU-R M.1545建议书[4]，“测试容差”是指ITU-R M.1545建议书建议2中提及的放宽值，即核心规范值与测试限值之间的差值，依据ITU-R M.1545建议书附件1中的图2和3，应用共享风险原则对其进行评估。若核心规范值与测试限值相等（见ITU-R M.1545建议书附件2中的图3），则“测试容差”等于0。

## 附件3

### 5Gi RIT<sup>8</sup>

附件2中的无用发射特性应适用于5Gi RIT。

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<sup>8</sup> 由TSDSI开发，命名为“5Gi RIT”。

## 附件4

## DECT-2020 NR-RIT组件

## 引言

DECT 5G-SRIT由两部分组成：

- DECT-2020 NR-RIT组件
- 3GPP NR-RIT组件

本附件提供了使用DECT-2020 NR无线电接口的基站（FT模式下的无线电设备）的无用发射特性。

使用3GPP NR无线电接口的基站的无用发射特性在本建议书的附件2中提供。

## 1 DECT-2020 NR的无用发射特性

## 1.1 工作频段

工作频段编号在表A4-1和A4-2中定义。无线电设备可依据自身能力，支持一个或多个工作频段。

表A4-1

## 工作频段编号

DECT-2020 NR使用并在《无线电规则》中确定用于IMT的频段

频段编号	接收频段 (MHz)	发射频段 (MHz)	确定用于不同国家/区域中IMT的频段或其部分的脚注
1	1 880 - 1 900	1 880 - 1 900	<b>5.388</b>
2	1 900 - 1 920	1 900 - 1 920	<b>5.388</b>
5	450 - 470	450 - 470	<b>5.286AA</b>
6	698 - 806	698 - 806	<b>5.312B 5.317A</b>
7	716 - 728	716 - 728	<b>5.312B 5.317A</b>
8	1 432 - 1 517	1 432 - 1 517	<b>5.341A、5.341B、5.341C</b>
9	1 920 - 1 930	1 920 - 1 930	<b>5.388</b>
10	2 010 - 2 025	2 010 - 2 025	<b>5.388</b>
11	2 300 - 2 400	2 300 - 2 400	<b>5.384A</b>
12	2 500 - 2 620	2 500 - 2 620	<b>5.384A</b>
13	3 300 - 3 400	3 300 - 3 400	<b>5.429G</b>
14	3 400 - 3 600	3 400 - 3 600	<b>5.431A 5.431B</b>
15	3 600 - 3 700	3 600 - 3 700	<b>5.434</b>
16	4 800 - 4 990	4 800 - 4 990	<b>5.440A 5.441A 5.441B</b>
21	3 700 - 3 800	3 700 - 3 800	<b>5.435B</b>
22	1 910 - 1 930	1 910 - 1 930	<b>5.388</b>

表A4-2

## 工作频段编号

DECT-2020 NR使用并在《无线电规则》中  
未确定用于IMT的频段

频段 编号	接收频段 (MHz)	发射频段 (MHz)
3	2 400 - 2 483,5	2 400 - 2 483,5
4	902 - 928	902 - 928
17	5 725 - 5 875	5 725 - 5 875
18	5 150 - 5 350	5 150 - 5 350
19	5 470 - 5 725	5 470 - 5 725
20	3 800 - 4 200	3 800 - 4 200

## 1.2 定义、符号和缩略语

### 1.2.1 符号

$\beta$  傅里叶变换标度因子[2]

$\mu$  子载波标度因子[2]

$\Delta f_{oob}$  带外发射的频率偏移量[1]

$B_N$  标称信道带宽

$B_G$  标称信道带宽与传输带宽之差

$F_c$  载波中心频率

$P_{max}$  无线电设备功率等级的最大发射功率

### 1.2.2 缩略语

ACLR 相邻信道泄漏比

DFT 离散傅里叶变换

MBW 测量带宽

## 2 DECT-2020的发射机频谱发射特性

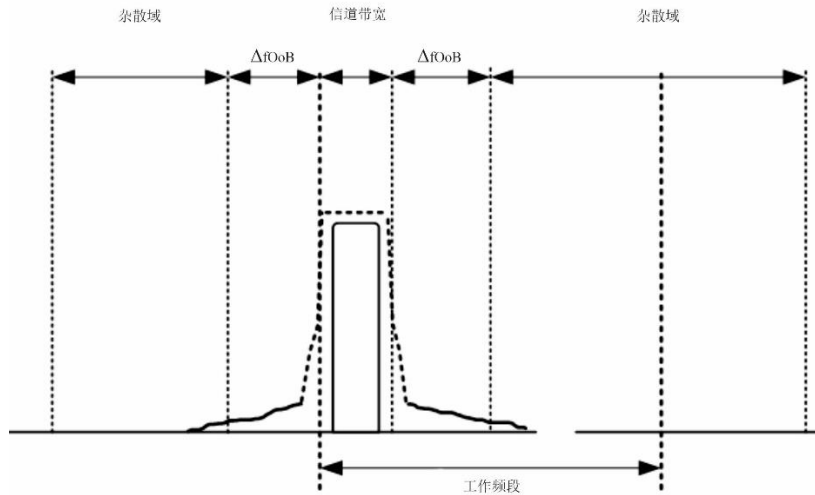
### 2.1 概述

无线电设备发射机频谱发射包含占用信道发射、带外发射和杂散发射。这些发射分量之间的关系如图A4-1所示。

发射机特性在无线电设备的天线连接器处进行规定。对于仅有集成天线的无线电设备，对每个天线端口，都应假设一个增益为0 dBi的参考天线。

功率值适用于无AAS时的操作。

图A4-1  
发射机射频频谱



### 2.2 占用信道带宽

占用带宽指的是这样一个频段的宽度：在该频段的下限频率之下和上限频率之上，其所发射的平均功率分别等于总平均发射功率的0.5%。

占用带宽应低于表A4-3中所定义的标准信道带宽。

表A4-3  
信道带宽

参数	工作信道带宽I	工作信道带宽II	工作信道带宽III		
标称信道带宽 (MHz)	1 728	3 456	6 912		
( $\mu, \beta$ )	(1,1)	(1,2)	(2,1)	(1,4)	(2,2)
传输信道带宽 (MHz)	1 539	3 051	6 075	6 102	6 156

### 2.3 最大输出功率

最大输出功率 ( $P_{max}$ ) 定义为所发射分组的平均功率。发射机最大输出功率在表A4-4中进行定义。无线电设备在工作时可使用一个或多个功率等级。

表A4-4  
最大输出功率

无线电设备 功率等级	工作信道带宽 (MHz)		
	1 728	3 456	6 912
	输出功率 (dBm)		
等级I	23	23	23
等级II	21	21	21
等级III	19	19	19
等级IV	10	10	10

注1: 测量带宽等于表A4-3中定义的工作信道带宽所对应的传输带宽。

## 2.4 带外发射

带外发射是指在调制过程和发射机非线性作用下, 紧邻所指配信道带宽之外的无用发射, 但不包括杂散发射。

无线电设备 (RD) 的频谱发射掩模适用于自所指配信道的 $\pm$ 边沿 (自 $F_c + B_N/2$ 或自 $F_c - B_N/2$ ) 起的频率偏移 ( $\Delta f_{OOb}$ )。对于大于表A4-5规定之 $\Delta f_{OOb}$ 的频率偏移, 适用第2.5节中的杂散发射要求。

表A4-5  
30 kHz测量带宽下的频谱发射限值

$\Delta f_{OOb}$		限值 (dBm)	测量带宽 (kHz)
$B_G/2 \geq 1$ MHz	$B_G/2 < 1$ MHz		
-	$0 - B_G/2$	$-10 - 10 \log_{10}(B_N/1,728)$	30
-	$-0 - -B_G/2$	$-10 - 10 \log_{10}(B_N/1,728)$	30
0 - 1 MHz	$B_G/2 - 1$ MHz	$-21 - 10 \log_{10}(B_N/1,728)$	30
0 - -1 MHz	$-B_G/2 - -1$ MHz	$-21 - 10 \log_{10}(B_N/1,728)$	30

注1: 30 kHz测量滤波器的第一个中心频率位于 $\Delta f_{OOb} = 0,015$  MHz, 即距离载波中心频率 $B_N/2 + 0,015$  MHz。

注2:  $B_G/2 - 1$  MHz频率范围内30 kHz测量滤波器的第一个中心频率位于 $\Delta f_{OOb} = B_G/2 + 0,015$  MHz, 即距离载波中心频率 $B_N/2 + B_G/2 + 0,015$  MHz。

注3: 在负的 $\Delta f_{OOb}$ 频率下, 对称地类似于注1和注2。

表A4-6

## 1 MHz测量带宽下的频谱发射限值

$\Delta f_{oob}$	限值 (dbm)		测量带宽 (MBW)
	$B_N \leq 6.912 \text{ MHz}$	$B_N > 6.912 \text{ MHz}$	
1 MHz - $B_N$	-10	$-10 - 10 \log_{10}(B_N/6,912)$	1 MHz
-1 MHz - $-B_N$	-10	$-10 - 10 \log_{10}(B_N/6,912)$	1 MHz
$B_N - 2B_N$	-25	$-25 - 10 \log_{10}(B_N/6,912)$	1 MHz
$-B_N - -2B_N$	-25	$-25 - 10 \log_{10}(B_N/6,912)$	1 MHz

注1: 1 MHz -  $B_N$  频率范围内1 MHz测量滤波器的第一个中心频率位于 $\Delta f_{oob} = 1,5 \text{ MHz}$ 。

注2:  $B_N - 2B_N$  频率范围内1 MHz测量滤波器的第一个中心频率位于 $\Delta f_{oob} = B_N + 0,5 \text{ MHz}$ 。

注3: 在负的 $\Delta f_{oob}$  频率下, 对称地类似于注1和注2。

测量设备的分辨率带宽应与测量带宽 (MBW) 相等。然而, 为提高测量精度、灵敏度和效率, 分辨率带宽可小于MBW, 也可使用过渡响应非常陡峭的矩形信道滤波器。当分辨率带宽小于MBW时, 应对结果在MBW范围内进行积分, 以便获得MBW的等效噪声带宽。

## 2.5 杂散发射

杂散发射指的是由发射机非预期效应引起的发射, 例如, 谐波发射、寄生发射、互调产物和变频产物, 但不包括带外发射 (除非另有规定)。杂散发射限值依据ITU-R SM.329建议书的一般性要求进行规定。

除非另有规定, 杂散发射限值适用于距离信道带宽边沿大于表A4-4中 $\Delta f_{oob}$  (MHz) 的频率范围。表A4-5中的杂散发射限值适用于所有发射机频段和信道带宽。

杂散发射应在发射机处于激活状态的时段内进行测量, 不包括任何瞬态时段。

对于各频率范围边缘上的测量条件, 各频率范围内测量位置的最低频率应设为该频率范围的下边界加上MBW/2。各频率范围内测量位置的最高频率应设为该频率范围的上边界减去MBW/2。MBW系指为受保护频段而定义的测量带宽。

表A4-7  
杂散发射限值

频率范围	最高电平 (dBm)	测量带宽
$9 \text{ kHz} \leq f < 150 \text{ kHz}$	-36	1 kHz
$150 \text{ kHz} \leq f < 30 \text{ MHz}$	-36	10 kHz
$30 \text{ MHz} \leq f < 1\ 000 \text{ MHz}$	-36	100 kHz
$1 \text{ GHz} \leq f < 12.75 \text{ GHz}$	-30	1 MHz
$12.75 \text{ GHz} \leq f < \text{频率上边缘的}$ 五次谐波 (以GHz为单位)	-30	1 MHz

## 2.6 相邻信道泄漏比

相邻信道泄漏比 (ACLR) 用于度量传输功率泄漏至相邻信道的量。ACLR定义为：以指配信道频率为中心的滤波后平均功率与以相邻信道频率为中心的滤波后平均功率之比，其测量带宽等于传输带宽。

在相邻信道上用方窗来测量ACLR。具体方法是：对传输信号进行DFT变换，并使用相应频点能量来计算相邻信道功率。

对于所有从-40 dBm至最大功率等级 $P_{Max}$ 的发射功率，均应满足表A4-8中所示的ACLR要求。

表A4-8  
相邻信道泄漏比限值

限值 (dBc)
-30

## 3 参考文献

- [1] ETSI TS 103 636-2 v1.5.1: DECT-2020 NR New Radio (NR); Part 2: Radio reception and transmission requirements, release 1
- [2] ETSI TS 103 636-3 v1.5.1: DECT-2020 NR New Radio (NR); Part 3: Physical layer, release 1
- [3] Recommendation ITU-R SM.329: "Unwanted emissions in the spurious domain".
- [4] Recommendation ITU-R M.1545: "Measurement uncertainty as it applies to test limits for the terrestrial component of International Mobile Telecommunications-2000".

## 附件4的 后附资料1

### 测试容差的定义

#### 测试容差

参照ITU-R M.1545建议书[10]，“测试容差”是指ITU-R M.1545建议书建议2中提及的放宽值，即核心规范值与测试限值之间的差值，依据ITU-R M.1545建议书[10]附件1中的图2和3，应用共享风险原则对其进行评估。若核心规范值与测试限值相等（见ITU-R M.1545建议书[10]附件1中的图3），则“测试容差”等于0。

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