

AAU5811
V100R016C10

Technical Specifications

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Contents

| | |
|--|-----------|
| 1 AAU5811 Technical Specifications..... | 1 |
| 2 Changes in AAU5811 Technical Specifications..... | 2 |
| 3 AAU5811 Configuration Combinations..... | 3 |
| 4 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) Technical Specifications..... | 4 |
| 4.1 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) RF Specifications..... | 4 |
| 4.2 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) Antenna Specifications..... | 6 |
| 4.3 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) Receiver Sensitivity..... | 11 |
| 4.4 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) Engineering Specifications..... | 11 |
| 4.5 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) CPRI Port Specifications..... | 14 |
| 5 Power Configuration Rules for RF Modules..... | 16 |

1 AAU5811 Technical Specifications

An AAU integrates the antenna and RF unit. This document provides a reference for planning and deploying an AAU5811. It describes the radio frequency (RF) specifications, antenna specifications, receiver sensitivity, engineering specifications, and common public radio interface (CPRI) port specifications of the AAU5811.

Product Versions

| Product Name | Solution Version | Product Version |
|--------------|--|--|
| AAU5811 | <ul style="list-style-type: none">SRAN16.15G RAN3.1 | V100R016C10 For details about the software versions of RF modules, see the document describing software and hardware compatibility. |

Intended Audience

This document is intended for:

- Network planners
- Onsite engineers
- System engineers

Organization

2 Changes in AAU5811 Technical Specifications

This section describes the changes in *AAU5811 Technical Specifications*.

Draft A (2020-01-20)

This is a draft.

AAU5811 Technical Specifications is a separate document created for this release. Its content derives from the sections "AAU5811 Technical Specifications" and "Power Configuration Rules for RF Modules" in *AAU Technical Specifications*. In this and subsequent releases, this content is removed from *AAU Technical Specifications* and constitutes a separate document.

Compared with *AAU Technical Specifications* of Issue 04 (2019-10-25) in V100R015C10, this issue does not include any new topics or changes, or exclude any topics.

3 AAU5811 Configuration Combinations

Different AU and RU combinations apply to different application scenarios.

Table 3-1 AAU5811 configuration combinations

| AAU Configuration Combination | Active Module Configuration | Antenna Configuration |
|---|-----------------------------|--|
| 3700 MHz A 32T32R 200 W+2x(690-960 MHz) P +2x(1710-2690 MHz) P +2x(1427-2690 MHz) P | AAU5811 3700 MHz | AAU5811 antenna 2x(690-960 MHz) AAU5811 antenna 2x(1710-2690 MHz) AAU5811 antenna 2x(1427-2690 MHz) |

NOTE

- In the **AAU Configuration Combination** column containing $x\text{A}+y\text{P}$, A indicates the active module and P indicates the passive module that is not installed in the AAU slot. x and y indicate the frequency bands of active and passive modules, respectively. For example, 2100 MHz A+700-900 MHz P means that the frequency band of the active module is 2100 MHz and that of the passive module ranges from 700 MHz to 900 MHz.

4 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) Technical Specifications

The technical specifications of an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) include RF specifications, antenna specifications, receiver sensitivity, engineering specifications, and CPRI port specifications.

[4.1 AAU5811 \(3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P\) RF Specifications](#)

The RF specifications include radio access technologies (RATs), frequency bands, TX/RX modes, capacity, and output power.

[4.2 AAU5811 \(3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P\) Antenna Specifications](#)

The antenna specifications include the frequency range, gains, and beam range of the antenna.

[4.3 AAU5811 \(3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P\) Receiver Sensitivity](#)

The receiver sensitivity of an AAU measures the capability of the AAU to receive signals with the minimum power.

[4.4 AAU5811 \(3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P\) Engineering Specifications](#)

The engineering specifications include the dimensions, weight, input power, module power consumption, and environmental specifications.

[4.5 AAU5811 \(3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P\) CPRI Port Specifications](#)

The CPRI port specifications of an AAU include the CPRI port protocol, rate, and maximum level of cascading and maximum distance with a BBU.

4.1 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) RF Specifications

The RF specifications include radio access technologies (RATs), frequency bands, TX/RX modes, capacity, and output power.

- Unless otherwise specified, in the following, **LTE** and **eNodeB** always include LTE FDD, LTE TDD, and LTE NB-IoT. In scenarios where they need to be distinguished, **LTE FDD**, **LTE TDD**, and **LTE NB-IoT** are used. The same rules apply to eNodeB.

- Unless otherwise specified, in the following, **NR** and **gNodeB** always include FDD and TDD. In scenarios where they need to be distinguished, **NR FDD** and **NR TDD** are used. The same rules apply to gNodeB.
- In the following, **G** is short for **GSM**, **U** is short for **UMTS**, **L** is short for **LTE FDD**, **T** is short for **LTE TDD**, **M** is short for **LTE NB-IoT**, **N** is short for **NR**, **N (FDD)** is short for **NR FDD**, and **N (TDD)** is short for **NR TDD**.

Supported Frequency Bands and RATs

Table 4-1 Frequency bands and RATs supported by an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Frequency Band (MHz) | Protocol-defined Band | Frequency Range (MHz) | RAT | IBW (MHz) | OBW (MHz) |
|----------------------|-----------------------|-----------------------|--------|-----------|-----------|
| 3700 | n78 | 3600 to 3800 | NR TDD | 200 | 200 |

TX/RX Modes and Capacity

Table 4-2 TX/RX modes and capacity of an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Frequency Band (MHz) | Frequency Range (MHz) | TX/RX Mode | Capacity | Supported Bandwidth (MHz) |
|----------------------|-----------------------|------------|--------------------|-------------------------------------|
| 3700 | 3600 to 3800 | 32T32R | NR TDD: 2 carriers | NR TDD: 20/30/40/50/60/70/80/90/100 |

Output Power and Carrier Configurations

Table 4-3 Output power and carrier configurations of an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Frequency Band (MHz) | Frequency Range (MHz) | Maximum Output Power | Output Power Configuration |
|----------------------|-----------------------|----------------------|--|
| 3700 | 3600 to 3800 | 200 W | For typical configurations, see Typical Power Configuration Reference for AAU Modules. |

 NOTE

- The *Typical Power Configuration Reference for AAU Modules* document includes the configurable carrier combinations and the output power of each carrier in each combination. Before referring to this document, you must be familiar with the output power configuration rules. For details, see [5 Power Configuration Rules for RF Modules](#).
- Each **Output Power per Carrier (W)** value in the *Typical Power Configuration Reference for AAU Modules* document indicates the maximum output power of each carrier under the corresponding configuration while ensuring the network performance. The actually configured carrier power of RF modules can be less than or equal to the value of **Output Power per Carrier (W)** in the document. The power configuration that is not supported in the document may be configurable on the software. Huawei can only promise the performance with the power configurations listed in the document.

RF Compliance Standards

Table 4-4 RF compliance standards for an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Item | Standard |
|-------------|----------------|
| NR standard | 3GPP TS 38.104 |

4.2 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) Antenna Specifications

The antenna specifications include the frequency range, gains, and beam range of the antenna.

Antenna Specifications

Table 4-5 Antenna electrical specifications of an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Item | Specifications |
|---|----------------|
| Frequency Range (MHz) | 3600 to 3800 |
| Polarization mode (°) | +45 and -45 |
| NR TDD gain (dBi) | 23.8 |
| NR TDD horizontal beam sweeping range (°) | -60 to +60 |
| NR TDD vertical beam sweeping range (°) | -15 to +15 |
| Number of antenna elements | 192 |

Table 4-6 Electrical specifications of an AAU5811 passive antenna (1710 MHz to 2690 MHz)

| Item | | Specifications | | |
|---|----------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Frequency Range (MHz) | | 1710 to 1880 | 1920 to 2170 | 2490 to 2690 |
| Polarization mode (°) | | +45 and -45 | +45 and -45 | +45 and -45 |
| Electrical downtilt (°) | | Continuously adjustable from 2 to 12 | Continuously adjustable from 2 to 12 | Continuously adjustable from 2 to 12 |
| Coupling degree from the calibration port to each radiation port (dB) | | -30±2 | -30±2 | -30±2 |
| Maximum input power per port (W) | | ≤ 80 | ≤ 80 | ≤ 80 |
| Gain (dBi) | At mid tilt | 16.3 | 16.8 | 17.3 |
| | Over all tilts | 16±0.7 | 16.5±0.7 | 17±0.5 |
| First upper sidelobe suppression (Typ.) (dB) | | -15 | -15 | -15 |
| Horizontal half-power beamwidth (°) | | 75±6 | 67±11 | 57±5 |
| Vertical half-power beamwidth (°) | | 7±0.7 | 6.4±0.6 | 5.2±0.5 |
| Front-to-back ratio, ±30° (dB) | | 25 | 25 | 25 |
| Port impedance (Ω) | | 50 | 50 | 50 |
| Surge protection | | DC grounding | DC grounding | DC grounding |

Table 4-7 Electrical specifications of an AAU5811 passive antenna (1427 MHz to 2690 MHz)

| Item | | Specifications | | | |
|-----------------------|--|----------------|--------------|--------------|--------------|
| Frequency Range (MHz) | | 1427 to 1517 | 1710 to 1880 | 1920 to 2170 | 2490 to 2690 |
| Polarization mode (°) | | +45 and -45 | +45 and -45 | +45 and -45 | +45 and -45 |

| Item | | Specifications | | | |
|---|----------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Frequency Range (MHz) | | 1427 to 1517 | 1710 to 1880 | 1920 to 2170 | 2490 to 2690 |
| Electrical downtilt (°) | | Continuously adjustable from 2 to 12 | Continuously adjustable from 2 to 12 | Continuously adjustable from 2 to 12 | Continuously adjustable from 2 to 12 |
| Coupling degree from the calibration port to each radiation port (dB) | | -30±2 | -30±2 | -30±2 | -30±2 |
| Maximum input power per port (W) | | ≤ 80 | ≤ 80 | ≤ 80 | ≤ 80 |
| Gain (dBi) | At mid tilt | 15 | 16.6 | 17 | 17.2 |
| | Over all tilts | 14.8±0.3 | 16.2±0.5 | 16.7±0.5 | 16.8±0.6 |
| First upper sidelobe suppression (Typ.) (dB) | | -15 | -15 | -15 | -15 |
| Horizontal half-power beamwidth (°) | | 82±7 | 74±7 | 69±7 | 57±7 |
| Vertical half-power beamwidth (°) | | 8.7±0.8 | 7±0.7 | 6.4±0.6 | 5.2±0.6 |
| Front-to-back ratio, ±30° (dB) | | 25 | 25 | 25 | 25 |
| Port impedance (Ω) | | 50 | 50 | 50 | 50 |
| Surge protection | | DC grounding | DC grounding | DC grounding | DC grounding |

Table 4-8 Electrical specifications of an AAU5811 passive antenna (690 MHz to 960 MHz)

| Item | | Specifications | | | |
|-------------------------|--|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Frequency Range (MHz) | | 690 to 803 | 790 to 862 | 824 to 894 | 880 to 960 |
| Polarization mode (°) | | +45 and -45 | +45 and -45 | +45 and -45 | +45 and -45 |
| Electrical downtilt (°) | | Continuously adjustable from 2 to 12 | Continuously adjustable from 2 to 12 | Continuously adjustable from 2 to 12 | Continuously adjustable from 2 to 12 |

| Item | | Specifications | | | |
|--|----------------|----------------|--------------|--------------|--------------|
| Frequency Range (MHz) | | 690 to 803 | 790 to 862 | 824 to 894 | 880 to 960 |
| Maximum input power per port (W) | | ≤ 120 | ≤ 120 | ≤ 120 | ≤ 120 |
| Gain (dBi) | At mid tilt | 14.2 | 14.5 | 14.8 | 15.2 |
| | Over all tilts | 13.8±0.5 | 14.1±0.5 | 14.4±0.5 | 14.8±0.5 |
| First upper sidelobe suppression (Typ.) (dB) | | -15 | -15 | -15 | -15 |
| Horizontal half-power beamwidth (°) | | 77±9 | 73±7 | 69±8 | 66±6 |
| Vertical half-power beamwidth (°) | | 10.3±0.9 | 9.4±0.6 | 9.1±0.5 | 8.5±0.5 |
| Front-to-back ratio, ±30° (dB) | | 22 | 22 | 22 | 22 |
| Port impedance (Ω) | | 50 | 50 | 50 | 50 |
| Surge protection | | DC grounding | DC grounding | DC grounding | DC grounding |

Antenna Patterns

In the pattern, the area outlined with the blue line is the maximum beam coverage scope, and the area outlined with the red line is the minimum beam coverage scope.

Figure 4-1 Vertical pattern sample of AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) beams

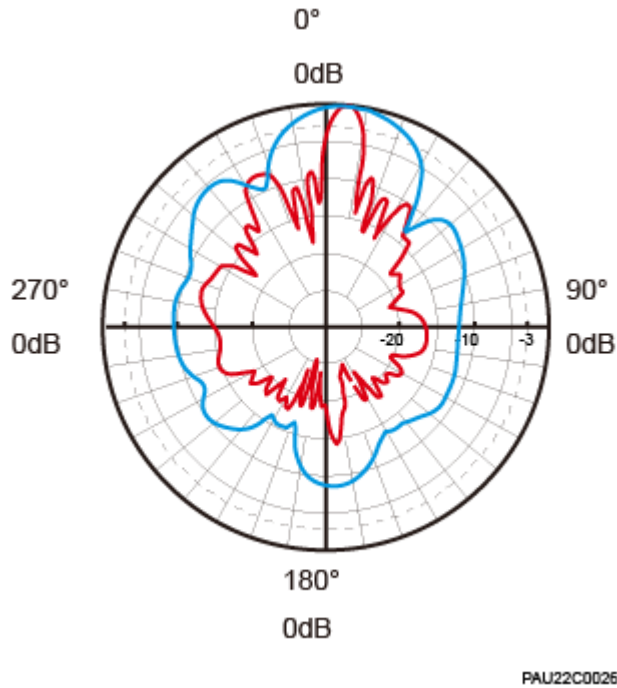
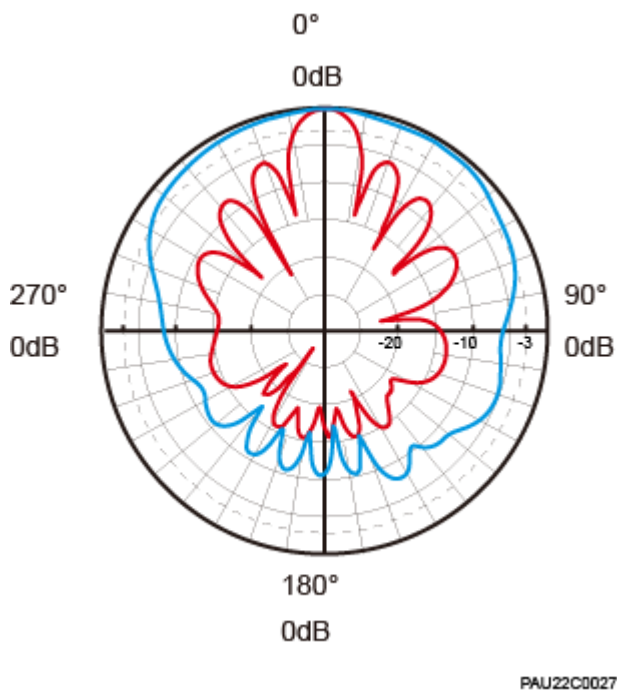


Figure 4-2 Horizontal pattern sample of AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) beams in the macro coverage scenario



4.3 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) Receiver Sensitivity

The receiver sensitivity of an AAU measures the capability of the AAU to receive signals with the minimum power.

Table 4-9 Receiver sensitivity of an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Frequency Band (MHz) | Frequency Range (MHz) | Receiver Sensitivity |
|----------------------|-----------------------|----------------------|
| 3700 | 3600 to 3800 | NR TDD: -99.2 dBm |

NOTE

The NR TDD receiver sensitivity is measured with the ambient temperature of 25°C (77°F) and test configurations (QPSK, R = 1/3, 51 RBs) recommended in 3GPP TS 38.141.

4.4 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) Engineering Specifications

The engineering specifications include the dimensions, weight, input power, module power consumption, and environmental specifications.

Input Power

Table 4-10 Input power of an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Power Supply Type | Operating Voltage |
|-------------------|----------------------|
| -48 V DC | -36 V DC to -57 V DC |

Module Power Consumption

Table 4-11 Power consumption of an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Frequency Band (MHz) | Frequency Range (MHz) | Typical Power Consumption (W) ^a |
|--|-----------------------|--|
| 3700 | 3600 to 3800 | 796 |
| a: The typical power consumption of an RF module is measured when the ambient temperature is 25°C (77°F) and the traffic load reaches 50%. The actual power consumption has a 10% deviation from this value. | | |

Dimensions and Weight

Table 4-12 Dimensions and weight of an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Frequency Band (MHz) | Frequency Range (MHz) | Dimensions (H x W x D) | Weight |
|----------------------|-----------------------|---|--|
| 3700 | 3600 to 3800 | 2099 mm x 469 mm x 318 mm (82.64 in. x 18.47 in. x 12.52 in.) | 68 kg (149.94 lb, excluding mounting kits) |

Environmental Specifications

Table 4-13 Environmental specifications of an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Item | Specifications |
|---|--|
| Operating temperature | Without solar radiation: -40°C to +55°C (-40°F to +131°F) |
| Wind load (Assume that the wind speed is 150 km/h.) | <ul style="list-style-type: none"> ● Front: 1080 N ● Side: 945 N ● Rear: 1745 N |
| Operating wind speed | 150 km/h |
| Survival wind speed | 200 km/h |
| Relative humidity | 5% RH to 100% RH |
| Atmospheric pressure | 70 kPa to 106 kPa |

NOTE

The output power of an AAU temporarily decreases when it operates at temperature ranges 10°C (50°F) less than or equal to its maximum rated value. This is dependent on installation scenario, traffic load, and carrier configuration.

Table 4-14 Surge protection specifications of ports

| Port | Surge Protection Mode | Surge Protection Specifications |
|------------|-----------------------|---------------------------------|
| Power port | Surge current | 20 kA |

NOTE

- Unless otherwise specified, the lightning protection specifications depend on the surge waveform of 8/20 μ s.
- All the surge current items, unless otherwise specified as **Maximum discharge current**, refer to **Nominal discharge current**.

Compliance Standards

Table 4-15 Compliance standards for an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Item | Standard |
|----------------------------------|--|
| Operating environment | ETSI EN 300019-1-4 V2.1.2 (2003-04) Class 4.1: "Non-weatherprotected locations" |
| Storage environment ^a | ETSI EN 300019-1-1 V2.1.4 (2003-04) Class 1.2 "Weatherprotected, not temperature-controlled storage locations" |
| Shockproof protection | Interim Provisions for Test of Anti-seismic Performances of Telecommunications Equipment |
| Ingress protection rating | IP65 |

| Item | Standard |
|--|---|
| Surge protection | <ul style="list-style-type: none"> ● IEC 62305-1 Protection against lightning - Part 1: General principles ● IEC 62305-3 Protection against lightning - Part 3: Physical damage to structures and life hazard ● IEC 62305-4 Protection against lightning - Part 4: Electrical and electronic systems within structures ● ITU-T K.35 Bonding configurations and earthing at remote electronic sites ● ITU-T K.56 Protection of radio base stations against lightning discharges ● ITU-T K.97 Lightning protection of distributed base stations ● ETSI EN 300 253 Environmental Engineering (EE): Earthing and bonding configuration inside telecommunications centers ● YD/T 2324-2011: Lightning protection requirements and test methods for radio base stations ● GB 50689-2011: Code for design of lightning protection and earthing engineering for telecommunication bureaus (stations) |
| a: The validity period is one year. The product can function properly within the validity period if the storage environment meets the preceding standards. | |

4.5 AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) CPRI Port Specifications

The CPRI port specifications of an AAU include the CPRI port protocol, rate, and maximum level of cascading and maximum distance with a BBU.

Table 4-16 CPRI port protocol and rate of an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P)

| Number of CPRI Ports | Protocol Type | Port Rate (Gbit/s) |
|----------------------|---------------|--------------------|
| 2 | eCPRI | 10.3125/25.78125 |

Table 4-17 Maximum level of cascading and maximum distance between an AAU5811 (3.7 A+1.8-2.6 P+1.4-2.6 P+0.7-0.9 P) and a BBU

| Module | Maximum Level of Cascading with a BBU | Maximum Distance from a BBU |
|---------|---------------------------------------|--|
| AAU5811 | Not supported | <ul style="list-style-type: none">• 25 Gbit/s optical module: 10 km (6.21 mi.)• 10 Gbit/s optical module: 20 km (12.43 mi.) |

 NOTE

- For details about the CPRI topologies supported by each type of AAU, see RF Unit and Topology Management.
- For details about the ALD capabilities supported by each type of AAU (for example, the capabilities of RF ports supporting RET antennas and TMAs), see ALD Management.

5 Power Configuration Rules for RF Modules

This section describes the power configuration standards for RF modules, RF channel configuration rules, and remarks.

RF Compliance Standards

When you configure power for RF modules, comply with the following standards:

- GSM: multi-carrier base transceiver station (MCBTS) in 3GPP TS 45.005
- UMTS: 3GPP TS 25.141
- LTE: 3GPP TS 36.141
- NR TDD: 3GPP TS 38.104
- Multimode: multi-standard radio (MSR) in 3GPP TS 37.141

RF Channel Configuration Rules

When multimode RF modules work in a single mode, the rules for configuring RF channels are the same as those for configuring RF channels in single-mode RF modules. The following table provides the rules for configuring RF channels in multimode RF modules working in multiple modes.

Table 5-1 Rules for configuring RF channels in multimode RF modules

| RF Module Type | RF Channel Configuration Rule |
|----------------|--|
| 1T RF module | Non-MSR standard: One RF module can serve only one RAT and the rules for configuring RF channels in such an RF module is the same as those for configuring RF channels in a single-mode RF module. |
| | MSR standard: One RF module can serve two RATs at the same time, and the two RATs can be carried over the same transmit channel. |

| RF Module Type | RF Channel Configuration Rule |
|----------------|--|
| 2T RF module | Non-MSR standard: Multiple RATs cannot be configured on one RF channel. For example, GSM carriers are carried over TX channel A while UMTS carriers are carried over TX channel B. |
| | MSR standard: One RF channel can be configured with two RATs. |
| | Power of two transmit channels must be balanced if possible. |

 **NOTE**

1T RF module: module that has only one transmit channel. 2T RF module: module that has two transmit channels.

NR Configuration Rules

To ensure the performance of an NR cell in low frequency bands, the minimum configurable output power of the NR cell is equal to the total rated power of an RF module (unit: W) divided by 10. To ensure the performance of an NR cell in high frequency bands, the minimum configurable EIRP of an RF module is equal to the rated EIRP of the RF module (unit: dBm) minus 10.

 **NOTE**

The AAU5612 is used as an example. The maximum output power of the AAU5612 is 200 W. When you configure an NR cell, the minimum output power of the NR cell is 20 W (equal to 200 W divided by 10).

- In this document, a transmit channel is represented by PA. For example, n transmit channels of an RF module are represented by PA1, PA2, ..., and PA n . The two transmit channels of a 2T RF module are represented by PA1 and PA2. Unless otherwise specified, the power configuration values of all PAs of an RF module can be interchanged.
- In this document, each value in the **Output Power per Carrier (W)** column indicates the maximum output power of each carrier under the corresponding configuration while ensuring the network performance. **Output Power per GSM Carrier With Dynamic Power Sharing** is the available maximum output power for every carrier during dynamic power sharing. If this power is exceeded, the system cannot guarantee the network performance and will report an alarm.

 **NOTE**

- The actually configured carrier power of RF modules can be less than or equal to the value in the **Output Power per Carrier (W)** column in this document.
- The specifications that are not supported in this document may be configurable. Only the performance with the configuration within the committed specification scope is ensured.
- In MIMO carrier scenarios, **MxN W** indicates that an MIMO carrier is configured in M PAs, and each PA is configured with power of N W.
- For an nT RF module (n is 2, 4, or 8), the restriction is as follows:

$$\sum_{i=1}^N PA_i \times P_i \leq P_{AT} \times P$$

, where PA i indicates the number of carriers of transmit

channel i ; P_i indicates the output power of each carrier of transmit channel i ; PA_t indicates the total number of carriers configured in this RF module; P indicates the maximum output power supported by each carrier.

- A requirement for the GU frequency spacing is as follows: GU frequency spacing $\geq [(GSM \text{ bandwidth}/2) + (UMTS \text{ bandwidth}/2)]$.
- The typical configuration tables for PAs of GSM RF modules provided in this document only list power values in GMSK mode because power values in 8PSK mode cannot be configured.
- For the GBTS and eGBTS, the output power per carrier of the same RF module is the same. For GBTSs, the unit of the output power per carrier is W. For eGBTSs, the unit of the output power per carrier is dBm. The conversion relationship is as follows: $dBm = 10 \times \log(1000 \times W, 10)$ For example, when there is only one carrier on an AAU (GSM, 1900 MHz), the output power per carrier for a GBTS is 60 W (GMSK), and that for an eGBTS is 47.8 dBm (GMSK) which is the result of $ROUND(10 \times \log(1000 \times 60, 10))$.
- The formulas for calculating the minimum NB-IoT power per PA for an RF module are as follows:
 - Minimum NB-IoT power per PA for an RF module when NB-IoT cells work in guardband or in-band mode = Total rated power per PA/10000
 - Minimum NB-IoT power per PA for an RF module when NB-IoT cells work in standalone mode = Total rated power per PA/100

NOTE

For example, an AAU3920 supports a maximum output power configuration of 2x80 W. The minimum NB-IoT power per PA for an AAU3920 when NB-IoT cells work in standalone mode is calculated as follows: Minimum NB-IoT power per PA for an AAU3920 = $80 \text{ W}/100 = 0.8 \text{ W}$.

- When two LTE NB-IoT carriers are configured, the bandwidth spacing between the two NB-IoT carriers cannot be greater than 300 kHz.