



Taixin **802.11AH** frequency point setting instructions



Taixin confidential documents


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Confidentiality level	A	Taixin 802.11AH frequency point setting instructions	File No	
issue date	2023/2/1		file version	V1.6.1

Revision history

date	Version	describe	Revised by
2023/2/1	V1.6.1	Correct Japanese clerical errors;	WE
2022/12/1	V1.6	adds precautions for EU and Japan;	WE
2022/11/15	V1.5	Modifies China's frequency band usage instructions;	WE
2022/10/20	V1.4	modifies Japan's frequency band settings;	WE
2022/9/2	V1.3.1	Corrected clerical errors in China frequency band;	WE
2022/7/5	V1.3	adds Japanese frequency band settings;	WE
2022/2/18	V1.2	Modify the logo and modify	XYJ
2021/11/29	V1.1	the description of the EU frequency band; Things to note when adding Chinese frequency bands;	WE
2021/8/2	V1.0.5	corrects the clerical error in the Korean frequency band;	WE
2021/3/22	V1.0.4	corrects the clerical error of 2M in the US band;	WE
2020/12/15	V1.0.3	Added precautions for the use of CN/EU frequency bands; Added instructions for frequency band settings in South Korea;	WE
2020/11/3	V1.0.2	US 2M frequency points 903M and 927M are deleted;	WE
2020/9/20	V1.0.1	adds the type description of channel type;	WE
2020/8/15	V1.0.0	initial version;	WE

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1 Overview

TaiXin AH chip supports IEEE802.11AH protocol standard, with an operating frequency range of 730MHz~930MHz (specific module operation

Please refer to the module specification sheet for frequency range).

2 noun explanation

BSS_BW: The bandwidth occupied by BSS (unit: MHz), you can choose 2M/4M/8M, set according to the spectrum planning of the country and region, and the characteristics of the scheme;

FREQ_START1: The starting value of the center frequency point of the optional channel (unit: MHz/10, or 100KHz), set according to the spectrum planning of the country and region;

FREQ_END1: The end value of the center frequency point of the optional channel (unit: MHz/10, or 100KHz), set according to the spectrum planning of the country and region;

CHAN_LIST2: List of center frequencies of optional channels (unit: MHz/10, or 100KHz), set according to national and regional spectrum planning; Note 1: If the optional channels are

continuously available, FREQ_START and FREQ_END can be used to Set, calculated channel

The center frequency points are every other BSS_BW; for example, FREQ_START=9080, FREQ_END=9240, BSS_BW=8, then the calculated channel center frequencies are 908M, 916M, and 924M respectively, and each channel occupies 8M bandwidth;

Note 2: If the optional channels are discontinuously available, you can use CHAN_LIST to set them; the center frequency of each channel is not affected by BSS_BW constraint; CHAN_LIST cannot exceed 16 elements at most;

3 Frequency settings for each country and region

Sort alphabetically

3.1 AU (Australia)

a) BSS_BW=2M, since the channel is discontinuous for 2M bandwidth, it can only be set through CHAN_LIST: The center frequencies are

CHAN_LIST=[9160,9180,9210,9230,9250,9270], a total of 7 channels

916M/918M/921M/923M/925M/927M

b) BSS_BW=4M, since the channel is discontinuous for 4M bandwidth, it can only be set through CHAN_LIST:

CHAN_LIST=[9170,9220,9260], a total of 3 channels, the center frequencies are 917 M/922 M/926M;

c) BSS_BW=8M, only one channel can be used:

CHAN_LIST=[9240], a total of 1 channel, that is, 924M;



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3.2 CN (China)

Note 1: There is currently no AH-compliant frequency band in China. Please comply with relevant national spectrum regulations when using it.

Note 2: Radio and television 5G will occupy the 700M frequency band. The specific frequency bands are as follows:

Uplink: 703-743MHz + Downlink: 758-798MHz, the corresponding 5G channel number is n28;

Uplink: 703-733MHz + Downlink: 758-788MHz. The corresponding 5G frequency band number is n28a, which can be called the "reduced version".

Note 3: China Unicom's 5G will occupy the 900M frequency band. The specific frequency bands are as follows:

Uplink: 904-915MHz, downlink: 945-960MHz.

Mobile GSM also occupies the 900M frequency band. The specific frequency bands are as follows:

Uplink: 890-915MHz, downlink: 935-960MHz.

3.3 EU (European Union)

Please note that the EU region needs to distinguish between audio and video applications and IOT applications (application scenarios with a small duty cycle). a) For audio and video applications, the EU frequency band can use BSS_BW=2M and

BSS_BW=1M a) BSS_BW=2M, then there is only one channel:

CHAN_LIST=[8660], that is, the center frequency is 866M;

b) BSS_BW=1M, then there are 3 channels:

CHAN_LIST=[8655,8665,8675], that is, the center frequencies are 865.5M/866.5M/867.5M respectively;

b) For IOT applications, the EU frequency band can use BSS_BW=2M and BSS_BW=1M a) BSS_BW=2M, then

there are 2 channels: CHAN_LIST=[8640, 8660], that is, the center

frequencies are 864M and 866M; b) BSS_BW =1M, then there are 5 channels:

CHAN_LIST=[8635,8645,8655,8665,8675], that is, the center

frequencies are 863.5M/864.5M/865.5M/866.5M/867.5M;

Note 1.

Since 863-865M only allows the use of narrowband no more than 300kHz for audio and video applications, AH cannot be used;

2. EU has strict restrictions on the main tone, and the power needs to be limited to pass the certification;

3.4 JP (Japan)

According to Japan's new spectrum specifications in September

2022: a) BSS_BW=2M, a total of 3 channels, the center frequencies are 922M/924M/926M

CHAN_LIST=[9220,9240,9260]; b) BSS_BW=4M, a

total of 1 channel, the center frequencies are 924M, CHAN_LIST=[9240]. Notice



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1. Japan's spectrum certification has very high spurious requirements, and the main tone power needs to be reduced to a very low level to pass; 2. The requirement for channel access duty cycle (<10%) is only suitable for low duty cycle application scenarios. .

3.5 KN (South Korea)

c) BSS_BW=2M, since the channel is continuous for 2M, it can be set by `FREQ_START/FREQ_END`:

`FREQ_START=9185`, `FREQ_END=9225`, a total of 3 channels, the center frequencies are 918.5M/920.5M/922.5M

d) BSS_BW=4M, only one channel can be used:

`CHAN_LIST=[9215]`, a total of 1 channel, that is, 921.5M;

3.6 NZ (New Zealand)

Please note that the use of AH spectrum in New Zealand is quite special. Although AH can be used in the range of 915M~928M, the power of 915M~924M does not exceed 5dbm, and the power of 924M~928M does not exceed

36dbm; a) When using 915M~924M: i. BSS_BW=2M, since the channel is continuous for 2M, it can be set through

`FREQ_START/FREQ_END`: `FREQ_START=9160`, `FREQ_END=9220`, a total of 4 channels, the center frequencies are 916M/918M/920M/922M;

ii. BSS_BW=4M, since the channel is continuous for 4M, it can be set through `FREQ_START/FREQ_END`:

`FREQ_START=9170`, `FREQ_END=9210`, a total of 2 channels, the center frequencies are 917M/921M respectively;

iii. BSS_BW=8M, only one channel can be used:

`CHAN_LIST=[9190]`, a total of 1 channel, that is, the center frequency is 919M;

b) When using 924~928M:

i. BSS_BW=2M, since the channel is continuous for 2M, it can be set through `FREQ_START/FREQ_END`:

`FREQ_START=9250`, `FREQ_END=9270`, a total of 2 channels, the center frequencies are 925M/927M respectively;

ii. BSS_BW=4M, only one channel can be used:

`CHAN_LIST=[9260]`, a total of 1 channel, that is, the center frequency is 926M;

3.7 SG (Singapore)

a) BSS_BW=2M, since the channel is discontinuous for 2M bandwidth, it can only be set through `CHAN_LIST`:

`CHAN_LIST=[8680,9210,9230]`, a total of 3 channels, the center frequencies are 868 M/921 M/923M;

b) BSS_BW=4M, only one channel can be used:

`CHAN_LIST=[9220]`, a total of 1 channel, that is, the center frequency is 922M;



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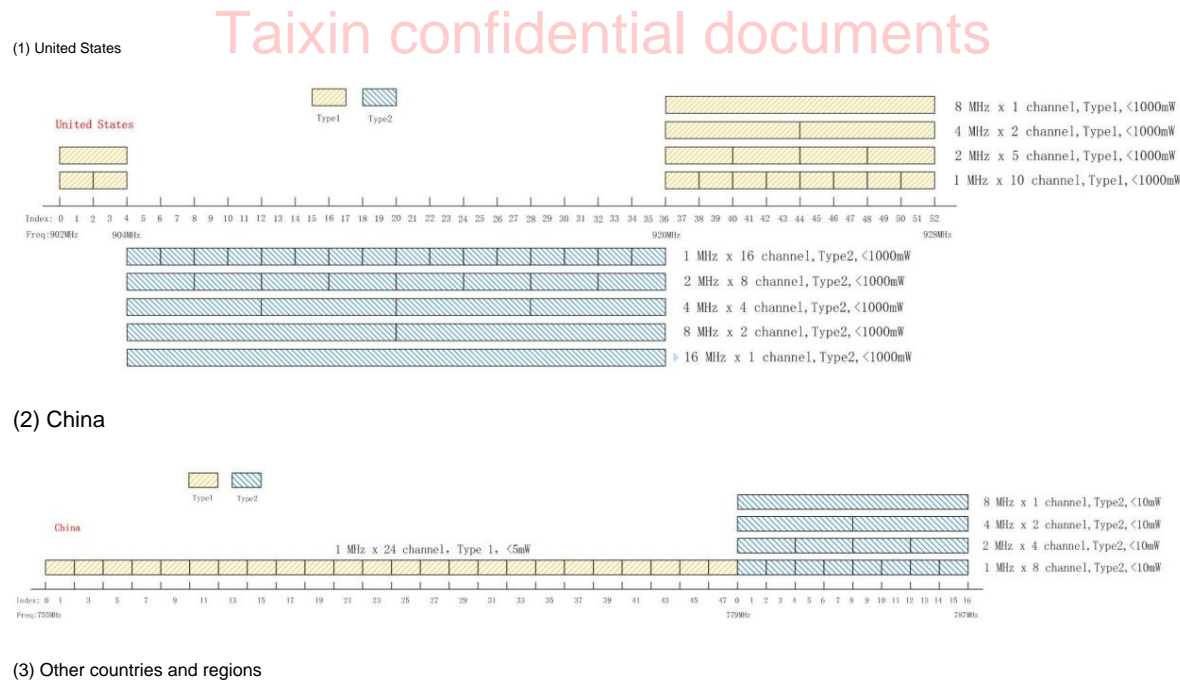
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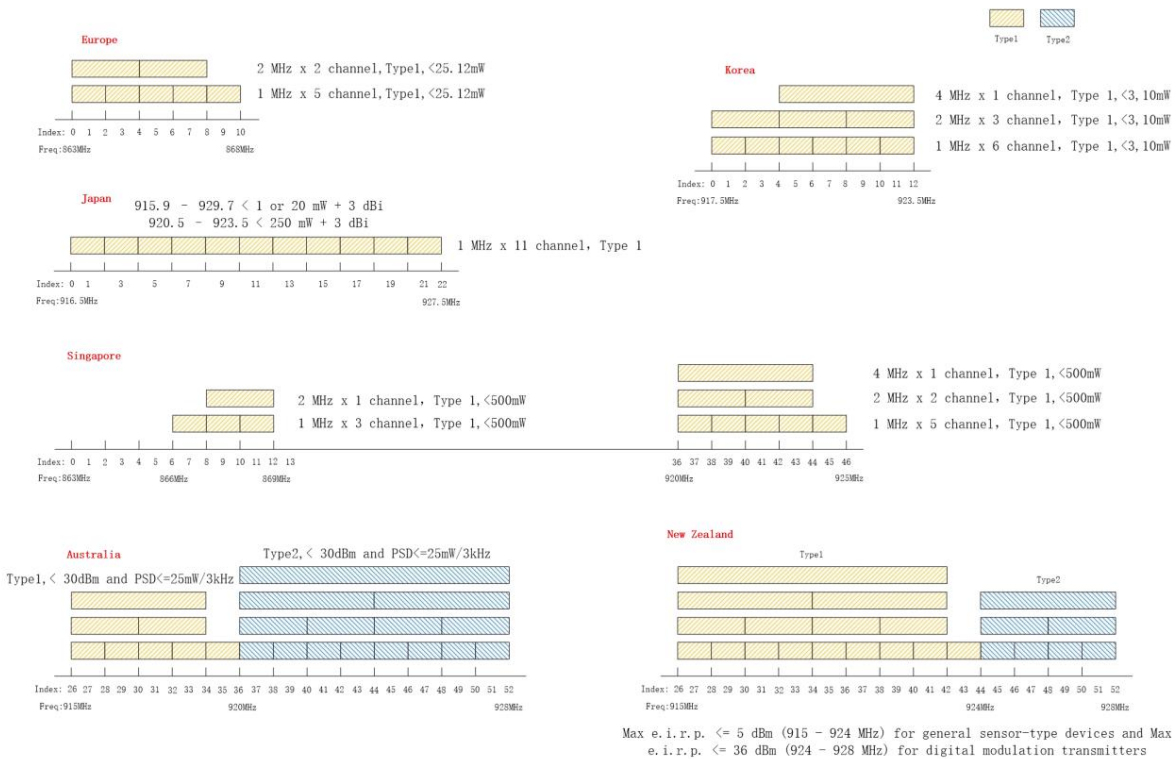
3.8 US (United States)

- a) BSS_BW=2M, since the channel is continuous for 2M, it can be set by `FREQ_START/FREQ_END`:
`FREQ_START=9050`, `FREQ_END=9250`, a total of 11 channels, the center frequency points are
`905M/907M/909M/911M/913M/915M/917M/919M/921M/923M/925M`
There are many 2M frequency points in the United States. In actual solutions, you can consider selecting some of them to avoid too many channels causing slow down connection scanning. For example, choose: `907M/911M/915M/919M/923M`,
`CHAN_LIST=[9070,9110,9150,9190,9230]`, then there is no need to set `FREQ_START` and `FREQ_END`; b)
BSS_BW=4M, since the channel is continuous for 4M, it can be set by `FREQ_START/FREQ_END`:
`FREQ_START=9060`, `FREQ_END=9260`, a total of 6 channels, the center frequency is
`906M/910M/914M/918M/922M/926M`
c) BSS_BW=8M, since the channel is continuous for 8M, it can be set by `FREQ_START/FREQ_END`:
`FREQ_START=9080`, `FREQ_END=9240`, a total of 3 channels, the center frequency is `908M/916M/924M`;

Appendix A

AH spectrum planning in various countries





Note: Type 1 and Type 2 are two channel types defined by the AH protocol, and the corresponding CCA thresholds are different. Type 1's CCA threshold is lower. Basically, Type1 is used by sensor nodes, and Type2 is used by big data traffic nodes.

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