

Regulations for Administration of Base Stations of Mobile Communications Network Businesses (February 25, 2013)

Chapter 1 General Provisions

Article 1

These Regulations are promulgated pursuant to Paragraph 3, Article 46 of the Telecommunications Act (hereinafter referred to as the “Act”).

Article 2

The National Communications Commission (NCC) is the competent authority of the Regulations.

Article 3

The terms in the Regulations are defined as follows:

1. Mobile communications: communications that use radio terminal equipment via the mobile communications network.
2. Mobile communications system: the communications system composed of equipment such as mobile communications switches, mobile stations, base stations, network and accounting administration equipment.
3. Mobile communications network: the communications network composed of the mobile communications system and telecommunications machines and lines.
4. Mobile communications network business: the business announced by the Executive Yuan in accordance with Paragraph 6, Article 12 of the Act.
5. Mobile station: the radio terminal equipment used for the mobile communications network businesses.
6. Base station: the equipment established on the land with radio communications links used to communicate among mobile stations or between mobile stations and non-mobile communications business users.
7. Winning bidder: shall be recognized by the provisions of the regulations according to the mobile communications network business of Article 4.
8. Service provider: the entity which the NCC has granted the right to engage in the business.
9. Subscriber: a user who registers or enters a contract with a service provider to use the business provided by the service provider.
10. Outdoor base station (OBS): the antennas primarily for subscribers to access outdoors.
11. Indoor base stations (IBS): the antennas primarily for subscribers to access indoors.
12. Femtocell access point (FAP): a low-power wireless device, operating in a business spectrum and connecting to mobile communications switches via a subscriber broadband modem, which is used for mobile station access.
13. Important public construction: refers to high speed rail, railway, mass rapid transit, freeways, highways, airports, harbors, tunnels, or other public constructions used by the public with a certain scale and with the verification of other authorities.
14. Effective isotropically radiated power (EIRP): the product of the net RF power of every carrier wave from an emitter transferred to the antenna and the antenna gain.
15. Co-site: base stations established at the same site by service providers.
16. Co-antenna: base stations established by service providers by using the same antenna or sparing ports and machinery space.

Chapter 2 Base station establishment

Article 4

A winning bidder or a service provider shall not install any base station without an installation permit and shall not utilize it without a base station license before examinations to be qualified. However, the winning bidder or the service provider can install a base station before acquiring the installation permit exclusively for the purpose of coordinating with the establishment of Important Public Construction after submitting the consent documents issued by the authorities of the Important Public Construction or Buildings to the NCC and obtain the special case approval from the NCC.

The winning bidder or the service provider may divert their own approved and experimental mobile businesses network base stations, or approved base stations transferred from mobile businesses network of other service providers and experimental mobile network administrators as a part of their own network system. The diverted facilities on the same site may not be demolished.

Article 5

The winning bidder or the service provider shall submit the following documents to the NCC to apply for the OBS or IBS installation permits:

1. The application forms of the radio station installation and relevant information of specification.
2. Affidavit for the radio station installation of the mobile business.

According to the proviso of Paragraph 1, Article 4, through the approval by the NCC, the winning bidder or the service provider shall submit the documents in the Paragraph 1 of this Article as well as the copy of the certificates approved by the NCC.

The winning bidder or the service provider applying for a new OBS installation permit shall submit the list and the plan and elevation view of the base station installation to notice the local government of the site.

If the winning bidder or the service provider failed to follow in the requirements of the affidavit, the NCC can revoke the installation permit. If there is any change or alternation to the affidavit, the winning bidder or the service provider shall submit another affidavit and report to the NCC for reference.

If the winning bidder or the service provider applies for the OBS installation, the NCC shall issue the installation permit after a qualified examination. However, the NCC can survey the sites as needed and the winning bidders and service providers cannot reject the survey.

If the winning bidder or the service provider applies for the IBS installation, the NCC shall issue the installation permit after a qualified examination.

When the base stations installation involves structural safety and rights of using the buildings or location of the base stations, the winning bidder or the service provider shall comply with the relevant regulations of construction management and acquire related approval from the competent authorities.

Article 6

The valid period of the base station installation permit is one year. If the winning bidders or service operators cannot complete the installation in the time limit, an explanation shall be submitted to the NCC for the application for extension within one month during the last two months before the deadline. The extension cannot exceed six months and can be applied for once only.

During the installation of the base station, the base station shall not emit radio waves unless the winning bidder or the service provider applies to the NCC for a short-term test or that the NCC undergoes the on-site technical inspection. The duration of the short-term test cannot exceed five days.

Article 7

After the OBS or IBS installation is completed, the winning bidders or service operators shall submit the following documents to the NCC to apply for the OBS or IBS inspection and the NCC shall issue the base station licenses after a qualified inspection:

1. The application forms for radio station licenses.
2. Self-assessment report of the base station inspection.

The first 50 OBS of a single mobile business shall be all inspected. The latter OBS shall be inspected by sampling according to the attached table 1. If the output power of all radio transmitters is under 1 watt, the latter OBS shall be inspected by sampling according to the attached table 2.

The IBS of a single mobile business shall be inspected by sampling according to the attached table 2.

When the city or county government or another competent authority affirms the winning bidder or the service provider cannot install the base station in conformity with a law and inform the NCC by mail, the NCC can revoke the installation permits or rescind the radio station licenses.

Article 8

The valid period of a radio station license is five years. The application for renewing a license shall be submitted within a month during the last two months before its expiration. The valid period of the renewed license shall start from the day when the old license expires.

When the renewal of the license mentioned in the preceding paragraph is dealt with, a technical inspection shall be conducted according to the NCC's discretion. The NCC shall issue the renewed license after the inspection has been passed.

Article 9

The winning bidder or the service provider shall submit the serial number list and relevant specifications of the batch of FAP to the NCC for inspection by sampling. An installation permit is not required. After approving the inspection and issuing the radio station license, the competent authority shall permit operation of the batch of FAP. The amount of sampling follows the reduction amount of the attached table II.

The winning bidder or the service provider shall send the sampled FAPs to the designated or approved place by the NCC for inspection.

The winning bidder or the service provider shall prepare the needed customer's broadband modem and complete the connection settings to the mobile communications switching equipment in the place in the preceding paragraph.

The winning bidders or service operators shall submit a monthly list of installed locations of licensed FAP stations by the end of each month. The competent authority may carry out an inspection as required without the consent of the winning bidder or the service provider.

The relevant events of the FAP installation permit and radio station license are not applicable to the requirements stipulated in Paragraph 1 of Article 4, Article 6 and Article 8. The radio station license renewal is not required for the winning bidder or service provider; however, the license owner shall submit the license for remarks amendment immediately if an FAP is damaged or decommissioned.

Each radio station license is limited to 10 serial numbers for FAPs.

Article 10

A winning bidder or service provider, without changing the address of a base station, shall file a report to the NCC prior to the change of the following recordings; if a radio station license has been issued, then the change shall be completed within one month and a renewal charter of the radio station shall be applied to the NCC.

1. Changing the address of antenna.
2. Changing the base station equipment model without changing the brand.
3. Changing the number of radio frequency unit.

A winning bidder or service provider, without changing the address of a base station, shall file a report to the NCC prior to the change of the equipment brands. The NCC shall issue the installation permit after qualified examination according to the provisions of Article 6, and issue the radio station license after qualified inspection according to the provisions of Article 8.

A winning bidder or service provider shall file the certificate to the NCC prior to the renewal of the radio license while the local governments rearrange house numbers to change the address of a base station or an antenna.

Article 11

Upon obtaining an OBS or IBS radio station license, the winning bidder or the service provider shall display a photocopy thereof externally of the station equipment for examination.

Article 12

Any lost or damage of installation permit or the radio station license shall be reported to the NCC with an explanation for replacement. In case the stated items have changed, they shall be reported to the NCC for renewal.

An installation permit or a radio station license may not be leased, lent transferred, or assigned to a third party unless stipulated by law.

Chapter 3 Engineering Technology standards

Article 13

The antenna of an OBS may not violate the regulations concerning building and obstacle height restriction in the perimeters of airports, airfields, navigation aids and related facilities promulgated by the Ministry of Interior, the Ministry of National Defense, and the Ministry of Transportation and Communications.

The height of an antenna structure exceeding 60 meters above ground shall be painted with aviation color marks and equipped with marker beacons, and shall maintain a safety clearance from high voltage lines for public safety.

Article 14

The height and direction of an OBS antenna to be erected on rooftop of buildings must maintain sufficient clearance that there are no legitimate buildings higher than the antenna within 15 meters of the front. If the antenna is used for outdoor coverage and its input radio frequency power is larger than 2 watts, then it cannot be installed indoors.

Article 15

The radio frequency equipment of a base station provided by a winning bidder or service provider shall require a model certificate from the NCC prior to installation application.

Article 16

The NCC may conduct scheduled or non-scheduled inspection of base station equipment of a winning bidder or service provider.

Article 17

The winning bidder or the service provider shall at least complete the co-antenna base stations and reach the following percentages of the total amount of constructed base stations from the starting date:

1. 5% of the total amount of base stations constructed within 1 year.
2. 10% of the total amount of base stations constructed within 2 years.
3. 12% of the total amount of base stations constructed within 3 years.
4. 14% of the total amount of base stations constructed within 4 years.
5. 16% of the total amount of base stations constructed within 5 years.
6. 18% of the total amount of base stations constructed within 6 years.
7. 20% of the total amount of base stations constructed within 7 years.

The winning bidder or the service provider shall install a base station by co-antenna or co-station way when it is installed on a public building or land of a governmental agency or organization.

FAP is not included into the co-station and co-antenna base stations.

The days to start calculating co-antenna ratios in Paragraph 1 are as follows:

1. The day for the Mobile Communications business is January 1, 2003, but only for the new installed base stations.
2. The day for the Third Generation Mobile Communications business is January 1, 2007.
3. The day for the Wireless Broadband Access Business is January 1 of the year next to the year that the Regulations are promulgated.

Chapter 4 Frequency, radio power and other radio wave regulations

Article 18

In order to prevent from or improve all types of overlaying and adjacent frequency interferences, the winning bidder or the service provider shall be responsible for making arrangement of base station locations and channels through negotiation among themselves or adopt other effective technologies until such interferences are improved. Unsuccessful negotiation result shall be reported to the NCC.

If the radio frequency used by the winning bidder or the service provider is interfered by the radio frequency used by other legitimate, existing radio stations of other business, the winning bidder or the service provider is responsible for making arrangement with such radio station through negotiation. Unsuccessful negotiation result shall be reported to the NCC.

If the base station in construction interferes with the band used by other legitimate, existing radio stations of other business, the winning bidder or the service provider shall adopt effective technologies to avoid the interference; if necessary, the base station shall cease to operate temporarily until improvement is made.

Article 19

The established mobile communications base station shall obey the following standards:

1. The 900MHz Digital Low-Power Wireless Telephone:
 - (1) Maximum RF Output Power: 10mW.
 - (2) Maximum Power Density of Electromagnetic Wave: 0.4mW/cm².
2. The Trunking Radio:
 - (1) Transmission and receiving shall adopt different frequencies.

- (2) Maximum EIRP: 125W.
 - (3) Maximum Power Density of Electromagnetic Wave: 500MHz band shall be 0.25mW/cm²; 800MHz band shall be 0.4mW/cm².
 - (4) Frequency stability: 500MHz band shall be 2.5ppm; 800MHz band shall be ±1.5ppm.
3. The Mobile Data:
 - (1) Transmission and receiving shall adopt different frequencies.
 - (2) Maximum EIRP: 125W.
 - (3) Maximum Power Density of Electromagnetic Wave: 500MHz band shall be 0.25mW/cm²; 800MHz band shall be 0.4mW/cm².
 - (4) Frequency stability: 500MHz band shall be ±2.5ppm; 800MHz band shall be ±1.5ppm.
4. The Radio Paging:
 - (1) 284.5MHz to 285.5MHz:
 - A. Maximum EIRP: 100W.
 - B. Maximum Power Density of Electromagnetic Wave: 0.2mW/cm².
 - C. Frequency stability: ±0.05ppm.
 - (2) 165.25MHz to 166.975MHz:
 - A. Maximum EIRP: 1600W.
 - B. Maximum Power Density of Electromagnetic Wave: 0.2mW/cm².
 - C. Frequency stability: ±0.3ppm.
 - (3) 280.5MHz to 281.5MHz:
 - A. Maximum EIRP: 500W.
 - B. Maximum Power Density of Electromagnetic Wave: 0.2mW/cm².
 - C. Frequency stability: ±0.5ppm.
5. The Mobile Telecommunications:
 - (1) Transmission and receiving with different frequency shall be adopted.
 - (2) Maximum EIRP: 500W.
 - (3) Maximum Power Density of Electromagnetic Wave: 0.45mW/cm² for 900MHz band; 0.9mW/cm² for 1800MHz band.
 - (4) Frequency Stability: ±1ppm.
6. The 1900MHz Digital Low-Power Wireless Telephone:
 - (1) Maximum EIRP: 32W.
 - (2) Frequency stability: ±3ppm.
 - (3) Maximum Power Density of Electromagnetic Wave: 0.95mW/cm².
7. The Third Generation Mobile Telecommunications:
 - (1) Maximum EIRP: 500W.
 - (2) Frequency stability of frequency: ±1PPM
 - (3) Maximum Power Density of Electromagnetic Wave: 0.4mW/cm² for 800MHz band; 1.0mW/cm² for 2000MHz band.
8. The Wireless Broadband Access:
 - (1) Maximum EIRP: 500W.
 - (2) Frequency stability of frequency: ±1PPM
 - (3) Maximum Power Density of Electromagnetic Wave: 1.0mW/cm².
9. The Mobile Broadband:
 - (1) Maximum EIRP: 500W
 - (2) Frequency stability of frequency: ±1PPM
 - (3) Maximum Power Density of Electromagnetic Wave: 0.35mW/cm² for 700MHz band; 0.45mW/cm² for 900MHz band; 0.9mW/cm² for 1800MHz band.

Any violation of the preceding paragraph of the Article shall be corrected in a deadline notified by the NCC.

Chapter 5 Annex

Article 20

A winning bidder or service provider shall follow the order of the NCC and form a mobile communications construction negotiation team to negotiate issues pertaining to co-antenna, co-station, or reserved antenna ports.

Article 21

The Operators shall beware of the arrangement of antennas while using co-stations or co-antennas and harmonize the view of them.

A lightning rod for antennas should be used in common.

The base station grid with protection for auxiliary antennas shall be deemed as a telecommunications facility accessory of the base station.

Article 22

The Operators shall pay examination fees and license fees for base station establishment according to the application process and the tariff standards set by the NCC.

Article 23

The NCC shall provide and announce the relevant forms, licenses and the items and format that should be put into, except the Regulations has other provisions.

Article 24

The Regulations shall come into effect as of the date of promulgation.

Attachment 1: OBS Inspection Sampling Table

Attachment 1: OBS Inspection Sampling Table

Quality: Deficit Ratio (%)		Major Defects (A): 2.5 AQL Total Defects (A+B): 4.0								Inspection Level: General II					
Lot Size	Normal Inspection					Serious Inspection					Reduced Inspection				
	Sa m p l i n g S i z e	Major (A)		Total (A+B)		Sa m p l i n g S i z e	Major (A)		Total (A+B)		S a m p l i n g S i z e	Major (A)		Total (A+B)	
		Ac ce pta nce Siz e	Re jec ted Siz e	Ac ce pt a bl e Siz e	Re jec ted Siz e		Ac ce pt a nce Siz e	Re jec ted Siz e	Ac ce pt a nce Siz e	Re jec ted Siz e		Ac ce pt a nce Siz e	Re jec ted Siz e	Ac ce pt a nce Siz e	Re jec ted Siz e
≤50	8	0	1	1	2	8	0	1	1	2	3	0	1	0	2
51~90	13	1	2	1	2	13	1	2	1	2	5	0	2	0	2
91~150	20	1	2	2	3	20	1	2	1	2	8	0	2	1	3
151~280	32	2	3	3	4	32	1	2	2	3	13	1	3	1	4
281~500	50	3	4	5	6	50	2	3	3	4	20	1	4	2	5
501~1200	80	5	6	7	8	80	3	4	5	6	32	2	5	3	6
≥1201	125	7	8	10	11	125	5	6	8	9	50	3	6	5	8

Notes:

- The first 50 base stations shall be totally inspected. The latter lot size of base stations being equal to or less than the minimum inspection size shall be totally inspected.
- Inspection standards:
 - Defect Level :
The defect level is divided into major defects (A) and minor defects (B).
 - AQL (Acceptable Quality Levels):
Major defects (A): AQL 2.5.
Total defects (A+B): AQL 4.0.
- Acceptance Standards:
 - If any major item in the base station equipment inspection list does not conform to the rule, it shall be recorded as a major defect. If any minor item in the base station equipment inspection list does not conform to the rule, it shall be recorded as a minor defect.
 - The accumulation of major defects will be noted as (A). The accumulation of major defects and minor defects will be noted as (A+B). If the (A) and (A+B) are both less than or equal to AQL, the lot will be judged qualified; otherwise unqualified.
 - If the number of unqualified equipment is more than the Acceptance size and less than the Rejected size, the lot can be accepted; however, the next lot shall be inspected by normal inspection.

Attachment 2: IBS Inspection Sampling Table

Attachment 2: IBS Inspection Sampling Table

Quality: Deficit Ratio (%)		Major Defects (A): 2.5 AQL Total Defects (A+B): 4.0					Inspection Level: General I			
Lot Size	Normal Inspection					Reduced Inspection				
	S a m p l i n g S i z e	Major (A)		Total (A+B)		S a m p l i n g S i z e	Major (A)		Total (A+B)	
		Accept ance Size	Rejec ted Size	Accept ance Size	Reject ed Size		Accept ance Size	Reject ed Size	Accept ance Size	Reject ed Size
≤ 50	5	0	1	0	1	2	0	1	0	1
51~90	5	0	1	0	1	2	0	1	0	1
91~150	8	0	1	1	2	3	0	1	0	2
151~280	13	1	2	1	2	5	0	2	0	2
281~500	20	1	2	2	3	8	0	2	1	3
501~1200	32	2	3	3	4	13	1	3	1	4
1201~3200	50	3	4	5	6	20	1	4	2	5
≥ 3201	80	5	6	7	8	32	2	5	3	6

Notes:

- The lot size of base stations being equal to or less than the minimum inspection size shall be totally inspected.
- Inspection standards:
 - Defect Level :
The defect level is divided into major defects (A) and minor defects (B).
 - AQL (Acceptable Quality Levels):
Major defects (A): AQL 2.5.
Total defects (A+B): AQL 4.0.
- Acceptance Standards:
 - If any major item in the base station equipment inspection list does not conform to the rule, it shall be recorded as a major defect. If any minor item in the base station equipment inspection list does not conform to the rule, it shall be recorded as a minor defect.
 - The accumulation of major defects will be noted as (A). The accumulation of major defects and minor defects will be noted as (A+B). If the (A) and (A+B) are both less than or equal to AQL, the lot will be judged qualified; otherwise unqualified.
 - If the number of unqualified equipment is more than the Acceptance size and less than the Rejected size, the lot can be accepted; however, the next lot shall be inspected by normal inspection.