

**Unofficial Translation**  
**Notification of the National Telecommunications Commission**  
**on Technical Standard for Telecommunication Equipment**  
**Re: Broadband Wireless Access (BWA) Radiocommunication Equipment**  
**using IMT-2000 OFDMA TDD WMAN Technology**

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The National Telecommunications Commission has a policy of specific technical standards for the telecommunication equipment, which are used widely, in order to keep pace with current technological circumstances, and to harmonize with international standard, and since the National Telecommunication Commission has issued the frequency plan for Broadband Wireless Access (BWA) and prescribed that radiocommunication equipment shall conform with the technical standards prescribed by the National Telecommunication Commission;

Pursuant to section 51(6) and section 78 paragraph one of the Act on the Organization to Assign Radio Frequency and to Regulate the Broadcasting and Telecommunication Services B.E. 2543 (2000) which contains certain provisions regarding the restriction of the rights and freedom of an individual as permitted to be done under the law by Article 29, in conjunction with Article 35, Article 36, Article 43, Article 45, Article 46, Article 47, Article 61 and Article 64 of the Constitution of the kingdom of Thailand; and pursuant to Section 32 of the Telecommunication Business Act B.E. 2544 (2001) which contains certain provisions regarding the restriction of the rights and freedom of an individual as permitted to be done under the law by Article 29, in conjunction with Article 35, Article 36, Article 41, Article 43 and Article 45 of the Constitution of the kingdom of Thailand; together with section 29(4) of the Radiocommunication Act B.E. 2498 (1955) which contains certain provisions regarding the restriction of the rights and freedom of an individual as permitted to be done under the law by Article 29, in conjunction with Article 35, Article 36, Article 41, Article 43, Article 45, Article 46, Article 47 and Article 61 of the constitution of the kingdom of Thailand; The National Telecommunications Commission hereby repeals the Notification of the National Telecommunications Commission on technical standard for Telecommunication equipment Re: Broadband Wireless Access Radiocommunication Equipment used for Metropolitan Area Network (MAN) on 28<sup>th</sup> day of December B.E. 2549 (2006) and specifies the technical standard for telecommunication equipment Re: Broadband Wireless Access (BWA) Radiocommunication Equipment using IMT-2000 OFDMA TDD WMAN Technology, as detailed in standard No. NTC TS 1013-2552 appended here to.

This Notification shall come into force as from the day following the date of its publication in the Government Gazette.

Issued on the 24<sup>th</sup> day of September B.E. 2552 (2009)

General Choochart Promphrasid

Chairman of the National Telecommunications Commission



## Technical Standard for Telecommunication Equipment

NTC TS 1013 – 2552

Broadband Wireless Access (BWA) Radiocommunication Equipment  
using IMT-2000 OFDMA TDD WMAN Technology

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Technical Standard for Telecommunication Equipment:  
NTC TS 1013-2552  
Broadband Wireless Access (BWA) Radiocommunication Equipment  
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Table of Contents

<b>1.Scope</b>	<b>1</b>
<b>2. Technical Requirements</b>	<b>1</b>
2.1 Radio Frequency Requirements	1
2.1.1 conducted output power	1
2.1.2 spectrum emission mask	2
2.1.3 spurious emissions	2
2.2 Electrical Safety Requirements	3
2.3 Radiation Exposure Requirements	3
<b>3. Conformity with the standard</b>	<b>4</b>

**Technical Standard for Telecommunication Equipment:  
Broadband Wireless Access (BWA) Radiocommunication Equipment  
using IMT-2000 OFDMA TDD WMAN Technology**

**1. Scope**

This technical standard specifies the minimum technical characteristics of Broadband Wireless Access (BWA) Radiocommunication Equipment Using IMT-2000 OFDMA TDD WMAN Technology (Orthogonal Frequency Division Multiple Access – Time Division Duplex – Wireless Metropolitan Area Network) including base station and subscriber station, as follows:

Frequency band	Bandwidth
2300 – 2400 MHz 2500 – 2690 MHz or Other frequency band as authorized by the National Telecommunications Commission	5; 10 MHz (TDD)

**2. Technical Requirements**

**2.1 Radio Frequency Requirements**

The radio frequency requirements for broadband Wireless Access (BWA) Radiocommunication Equipment Using IMT-2000 OFDMA TDD WMAN Technology shall be as follows:

**2.1.1 conducted output power**

The output power of the radiocommunication equipment at antenna connector shall not exceed the values given in the table below:

Type	Power (W)
Base station	60
Fixed/Nomadic subscriber station	5
Mobile subscriber station	2

Note : The National Telecommunications Commission may authorize the output power in the values different from the values shown in the table above on a case-by-case basis.

**Technical Standard for Telecommunication Equipment:  
Broadband Wireless Access (BWA) Radiocommunication Equipment  
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**2.1.2 spectrum emission mask**

Spectrum emission of the radiocommunication equipment shall not exceed spectrum emission mask specified in one or more of the following standards:

- (1) RECOMMENDATION ITU-R M.1580-2 (Generic unwanted emission characteristics of base stations using the terrestrial radio interfaces of IMT-2000) Annex 6 § 2 Spectrum emission mask
- (2) RECOMMENDATION ITU-R M.1581-2 (Generic unwanted emission characteristics of mobile stations using the terrestrial radio interfaces of IMT-2000) Annex 6 § 1 Spectrum emission mask
- (3) ETSI EN 302 326-2 (Fixed Radio Systems; Multipoint Equipment and Antennas; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive for Digital Multipoint Radio Equipment) § 5.3.4.1 Transmitter spectrum density masks
- (4) ETSI EN 544-1 (Broadband Data Transmission Systems operating in the 2 500 MHz to 2 690 MHz frequency band; Part 1: TDD Base Stations; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive) § 4.2.2 Spectrum emission mask
- (5) ETSI EN 544-2 (Broadband Data Transmission Systems operating in the 2 500 MHz to 2 690 MHz frequency band; Part 2: TDD User Equipment Stations; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive) § 4.2.2 Spectrum emission mask

**2.1.3 Spurious emissions**

The power levels of any spurious emissions from such radiocommunication equipment shall comply with one or more of the following standards:

- (1) RECOMMENDATION ITU-R M.1580-2 (Generic unwanted emission characteristics of base stations using the terrestrial radio interfaces of IMT-2000) Annex 6 § 3.1 Transmitter spurious emissions (conducted)
- (2) RECOMMENDATION ITU-R M.1581-2 (Generic unwanted emission characteristics of mobile stations using the terrestrial radio interfaces of IMT-2000) Annex 6 § 2 Transmitter spurious emissions (conducted)

**Technical Standard for Telecommunication Equipment:  
Broadband Wireless Access (BWA) Radiocommunication Equipment  
using IMT-2000 OFDMA TDD WMAN Technology**

- (3) ETSI EN 302 326-2 (Fixed Radio Systems; Multipoint Equipment and Antennas; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive for Digital Multipoint Radio Equipment) § 5.3.5 Transmitter spurious emissions
- (4) ETSI EN 544-1 (Broadband Data Transmission Systems operating in the 2 500 MHz to 2 690 MHz frequency band; Part 1: TDD Base Stations; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive) § 4.2.4 Transmitter spurious emissions
- (5) ETSI EN 544-2 (Broadband Data Transmission Systems operating in the 2 500 MHz to 2 690 MHz frequency band; Part 2: TDD User Equipment Stations; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive) § 4.2.4 Transmitter spurious emissions

## **2.2 Electrical safety requirements**

Base station of broadband Wireless Access (BWA) Using IMT-2000 OFDMA TDD WMAN technology shall comply with one or more of the following standards:

2.2.1 IEC 60950 - 1 : Information technology equipment – Safety - Part 1:

General requirements

2.2.2 TIS 1561 - 2548 : Information technology equipment – Safety:

General requirements

## **2.3 Radiation Exposure Requirement**

The installation and the use of Broadband Wireless Access (BWA) Radiocommunication Equipment Using IMT-2000 OFDMA TDD WMAN technology shall comply with the safety standard for the use of radiocommunication equipment on human health and safety criteria and measure for the use of radiocommunication equipment on human health prescribed by the National Telecommunication Commission.

## **3. Conformity with the standard**

The Broadband Wireless Access (BWA) Radiocommunication Equipment Using IMT-2000 OFDMA TDD WMAN technology shall present its conformity with this standard. It shall be regarded as telecommunication equipment type B prescribed in the notification of the National Telecommunication commission Re: Conformity Assessment of Telecommunication Equipment