

Conformity Assessment of Telecommunication Equipment May 2014

Office of the National Broadcasting and
Telecommunications Commission

1

PREFACE

The National Telecommunications Commission (NTC) and the National Broadcasting and Telecommunications Commission (NBTC), which later on in this document will be referred to as the Commission, has issued four Notifications regarding conformity assessment of telecommunication equipment:

- NTC Notification on conformity assessment of telecommunication equipment
- NTC Notification on conformity assessment procedures of telecommunication equipment done by the Office of NTC (Currently Office of NBTC)
- NTC Notification on rules, procedures, and conditions on establishing testing laboratory (in Thailand) for telecommunication equipment
- NBTC Notification on rules for recognizing telecommunication equipment test report from foreign laboratory

“conformity assessment” means the process to ensure that technical characteristics of telecommunication equipment conform to the technical standard or technical requirement prescribed by the Commission. This may include testing, registration, certification, and other related activities.

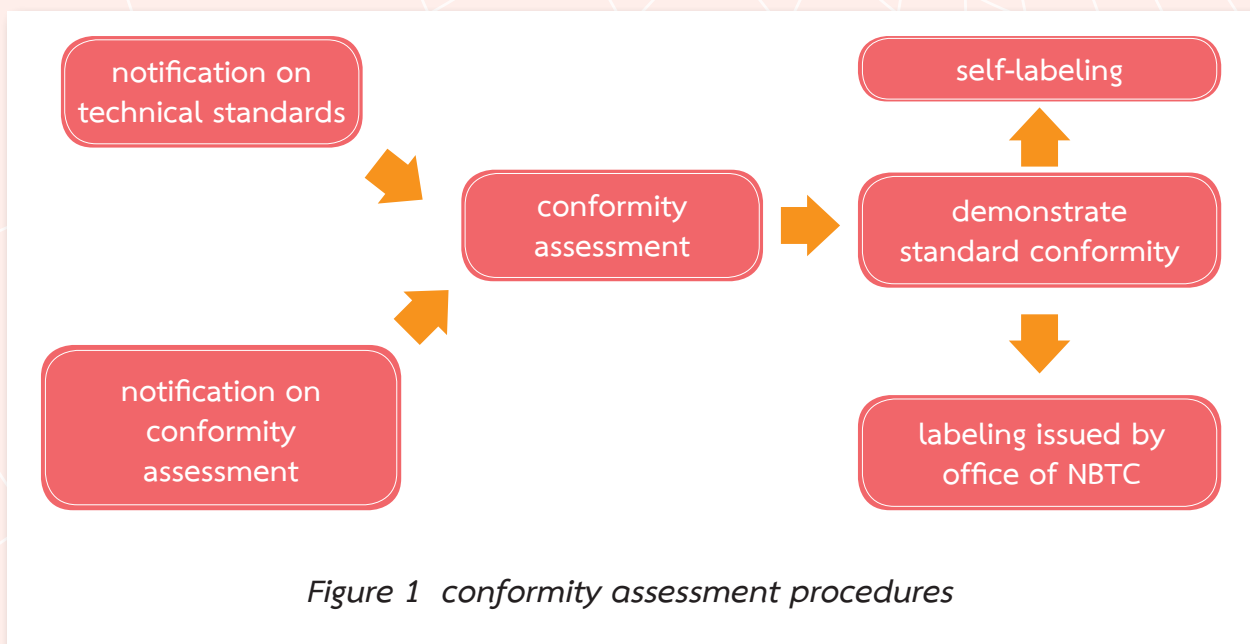


Figure 1 conformity assessment procedures

In addition, the Commission has issued a notification on Electro-Magnetic Field (EMF) exposure standard (NTC TS 5001-2550) and a notification on rules and measures for regulating EMF exposure to human, in order to ensure safety and protect any hazards to human from electromagnetic radiation exposure caused by utilizing radiocommunication equipment. These notifications indicate limits and measurement procedures for EMF exposure assessment for radiocommunications equipment operating in 9 kHz – 300 GHz band, as well as rules and measures for regulating EMF exposure.

This document had been issued by the Office of National Broadcasting and Telecommunications Commission (the Officer of NBTC) as a manual for suppliers in order to introduce and describe procedures for conformity assessment of telecommunication equipment as required by NTC/NBTC Notifications.

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Classification of Telecommunication Equipment

2.1 Telecommunication equipment which are subjected to conformity assessment. These equipment can be classified into two classes:

2.1.1 Class A equipment is the telecommunication equipment for which supplier has to demonstrate its conformity against prescribed technical standard or technical requirement by testing performed by relevant conformity assessment body (CAB), and then the equipment has to be registered with the Office of NBTC.

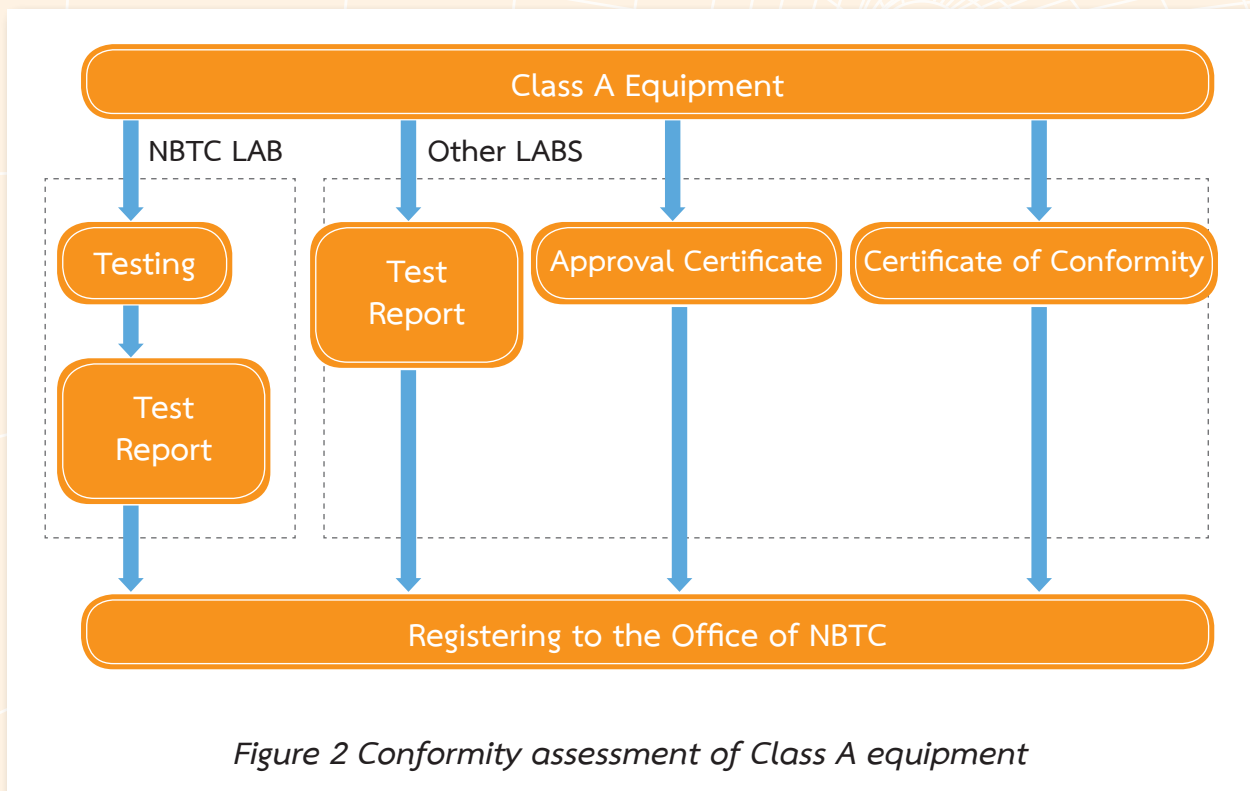


Figure 2 Conformity assessment of Class A equipment

List of telecommunication equipment	Applicable technical standard/requirements
Land mobile radiocommunication equipment (general)	NTC TS 006-2548 (Microphone)
	NTC TS 007-2548 (Radio Control)
Equipment for satellite communications	NTC TS 005-2548 (GMPCS)
	NTC TS 1019-2551 (antenna earth station)
Other radiocommunication equipment allowed by the Commission	NTC TS 1011-2549 (Vehicle Radar)
	NTC TS 1010-2550 (licensed RFID)
Power line communications equipment	NBTC TS 2002-2555 (Broadband PLC – In-building)

Table 1 Example of Class A equipment

2.1.2 Class B equipment is the telecommunication equipment for which supplier has to demonstrate its conformity against prescribed technical standard or technical requirement by testing performed by relevant conformity assessment body (CAB), and then the equipment has to be certified by the Office of NBTC.

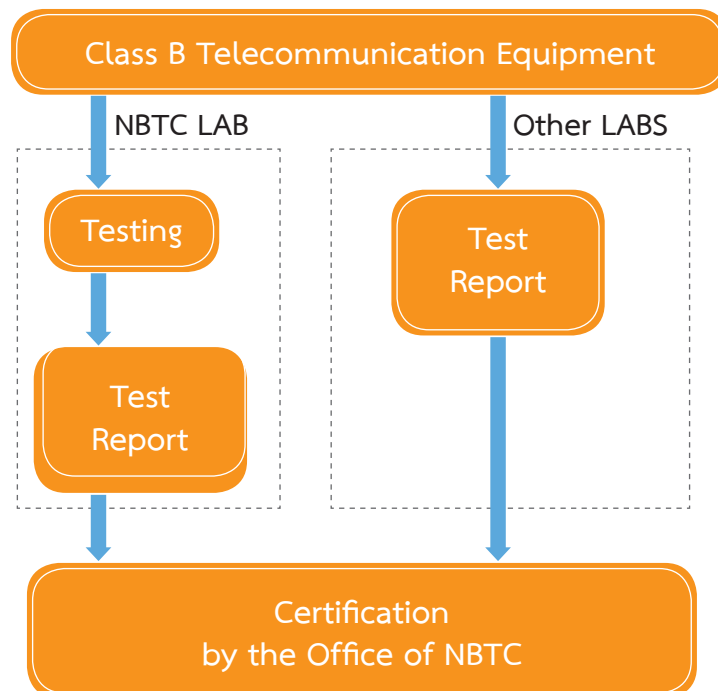


Figure 3 Conformity assessment of Class B equipment

List of telecommunication equipment	Applicable technical standard/requirements
Equipment for radio amateur	NTC TS 1018-2550
Land mobile radiocommunication equipment (general)	NTC TS 1001-2553 (VHF/UHF)
	NTC TS 1002-2553 (CB78/245)
	NTC TS 1009-2549 (Trunked)
	NTC TS 1024-2552 (VHF/UHF Digital)
Cellular equipment	NTC TS 1004-2553
	NTC TS 1008-2549
	NTC TS 1014-2552
	NTC TS 1015-2552
	NTC TS 1016-2549
	NTC TS 1017-2549
Maritime mobile radiocommunication equipment	NTC TS 1020-2550 (CB27)
	NTC TS 1021-2550 (VHF)
	NTC TS 1022-2552 (MF/HF)
Aeronautical mobile radiocommunication equipment	NTC TS 1003-2553 (VHF VOR)
	NTC TS 1023-2552 (VDL)
Wide-Area Broadband Wireless Access equipment (BWA)	NTC TS 1013-2552 (BWA)

Table 2 Example of Class B Equipment

2.2 Telecommunication equipment subject to Supplier 's Declaration of Conformity (SDoC) scheme is the equipment for which the Commission had prescribed technical standard or technical requirement, but the NTC/NBTC does not require such equipment to be registered or certified. In this case, supplier has an obligation to provide written attestation that the equipment conforms to such standard or technical requirement using Supplier's Declaration of Conformity (SDoC) form.

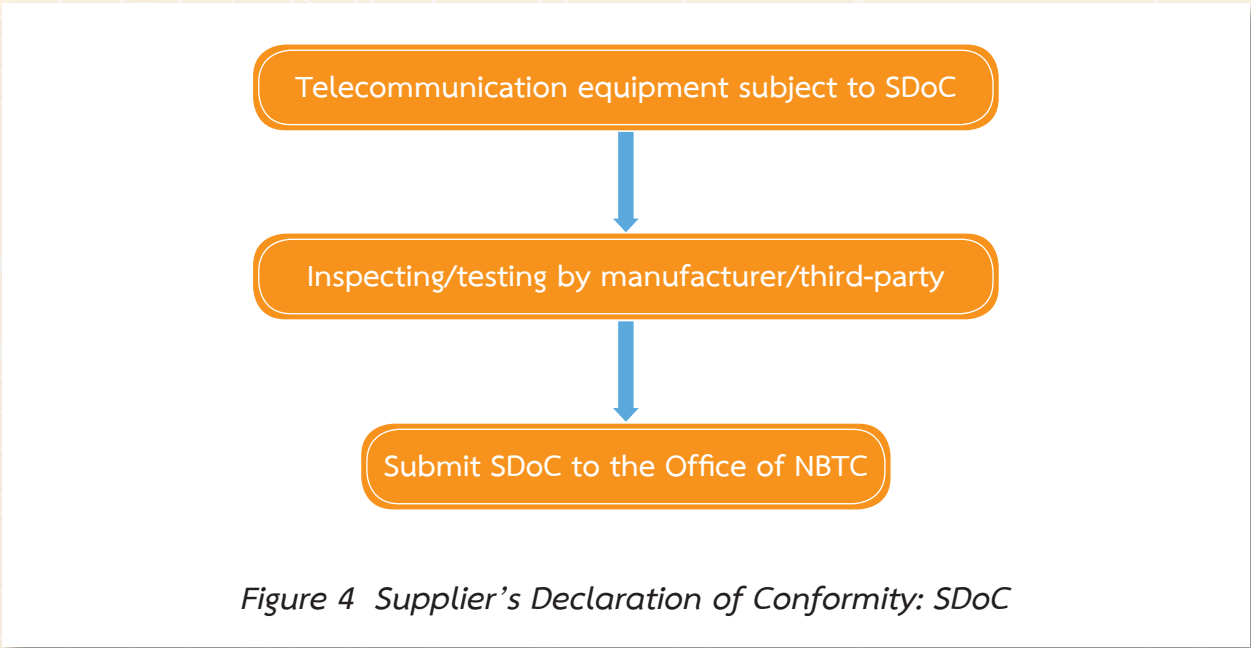


Figure 4 Supplier's Declaration of Conformity: SDoC

List of telecommunication equipment	Applicable technical standard/requirements
Telecommunication terminal equipment (TTE)	NBTC TS 3001-2555 (EMC)
<ul style="list-style-type: none"> - telephone set - facsimile equipment - modem - data terminal equipment - PABX - xDSL equipment 	NTC TS 4001-2550 (electrical safety)
Optical communication system	NTC TS 2001-2550
Other radiocommunication equipment allowed by the Commission	NTC TS 1010-2550 (license-exempt RFID)
	NTC TS 1012-2551 (RLAN,Wi-Fi)
Power line communications equipment	NBTC TS 2002-2555 (Narrowband PLC)
Microwave Fixed Link	Requirement according to NTC Frequency Plans
Low power radiocommunication equipment or short range device; e.g. <ul style="list-style-type: none"> - wireless microphone - cordless phone - Radiocommunication equipment used in radar applications - Bluetooth device - Medical radio device etc. 	Requirements according to Clause 2 of NTC Notification on License-exempt radiocommunication equipment/station

Table 3 Examples of telecommunication equipment subject to SDoC

2.3 Telecommunication equipment not subject to conformity assessment under these NTC Notifications:

- Telecommunication equipment used for educational purpose or used in laboratory by educational or education-related institutes
- Telecommunication equipment used for espionage purpose by national security agencies
- Telecommunication equipment used for scientific research and ecological purpose, including animal tracking, by institutes/agencies dealing with education, environment, or ecology
- Telecommunication equipment used by UN specialized agencies
- Telecommunication equipment used by foreign ship station or aircraft station, which is already pre-installed in those vessels
- Telecommunication equipment temporarily imported as personal effects without commercial purpose, and will be exported when no longer required

2.4 Telecommunication equipment for which these NTC/NBTC Notifications will not apply:

- Telecommunication equipment used within telecommunication network which is not a terminal equipment (e.g. exchange)
- Telecommunication cable, fiber optic cable

2.5 In addition, NTC notification on rules and measures for regulating EMF exposure to human has categorized radiocommunication equipment (Telecommunication equipment which intentionally radiate radio frequencies) into three types, in which type classification and their regulations are as follows

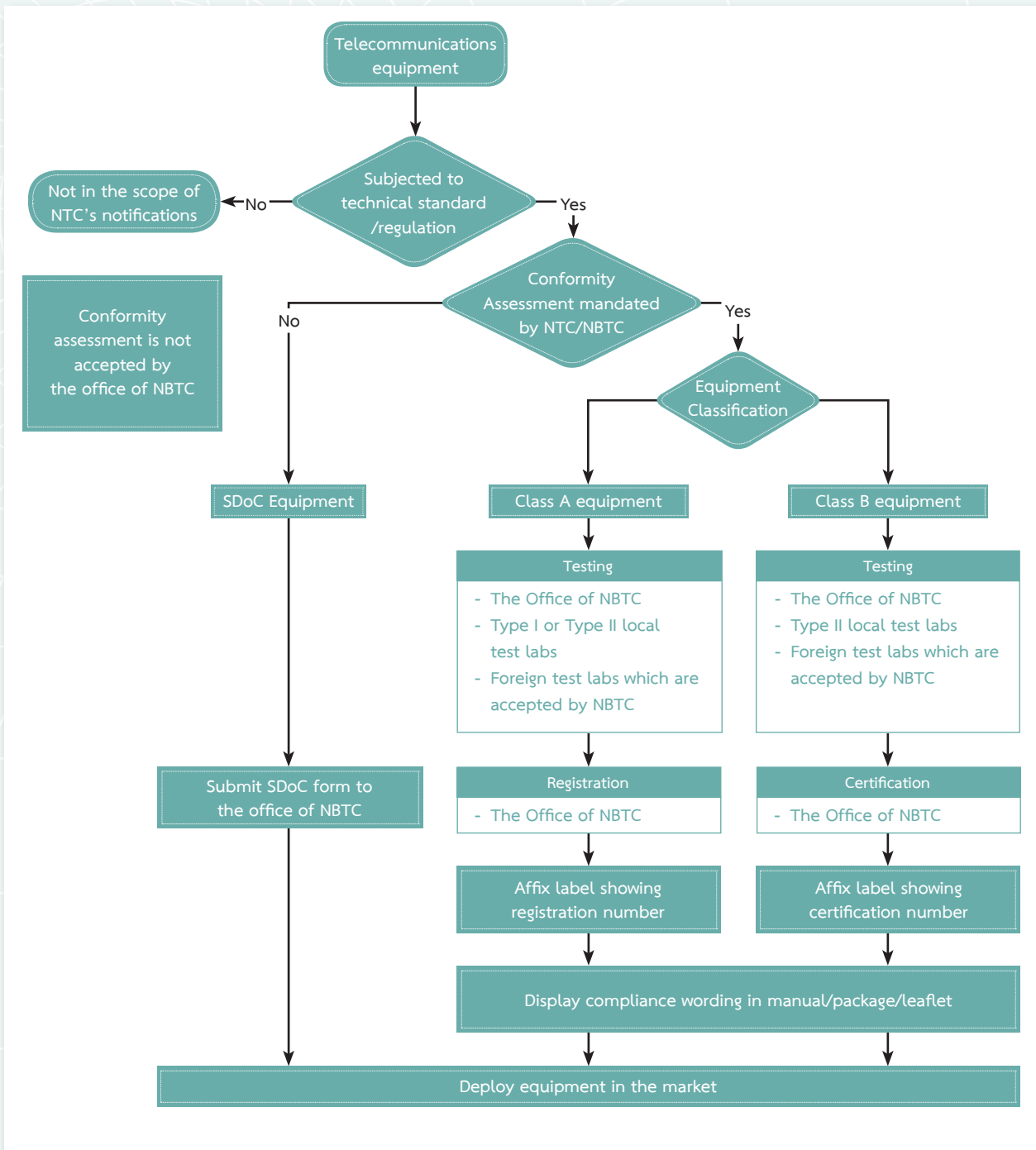
- **Type 1.** Radiocommunication equipment operating within 20 cm from human body in normal operating condition. (e.g. handheld cellular mobile terminal)
 - EMF exposure assessment requirements: Radiation exposure must be assessed by the Specific Absorption Rate (SAR) measurement
 - The Declaration of Conformity (DoC) must be submitted to the Office of NBTC (along with copy SAR test report in case of registration (Class A equipment) or certification (Class B equipment))

- **Type 2.** Radiocommunication equipment operating further away (more than 20 cm) from human body during normal operating condition (e.g. cellular mobile terminal installed in vehicle)
 - EMF exposure assessment requirements: Radiation exposure must be assessed (by EMF testing, or calculation)
 - The Declaration of Conformity (DoC) must be submitted to the Office of NBTC (along with copy EMF test report or calculation in case of registration (Class A equipment) or certification (Class B equipment))
- **Type 3.** Radiocommunication equipment that has been permanently installed in fixed location and has wide area of radiation coverage (e.g. cellular base station).
 - EMF exposure assessment requirements: EMF assessment must be conducted and results must be submitted to NBTC before installation.
- **Exempted equipment.** Following are radiocommunication equipment which are exempted from radiation exposure assessment requirement.
 - Radiocommunication equipment which are subjected to be use for national security
 - Two-way radio push-to-talk radiocommunication equipment which are subjected to be used by trained professional such as emergency personals, firemen, polices, military units, etc
 - Radiocommunication equipment on board ship or aircraft
 - Point-to-point fixed link station operating higher than 2GHz with transmission power not higher than 2 W
 - Radiocommunication equipment which has transmission power not higher than 100 mW e.i.r.p.

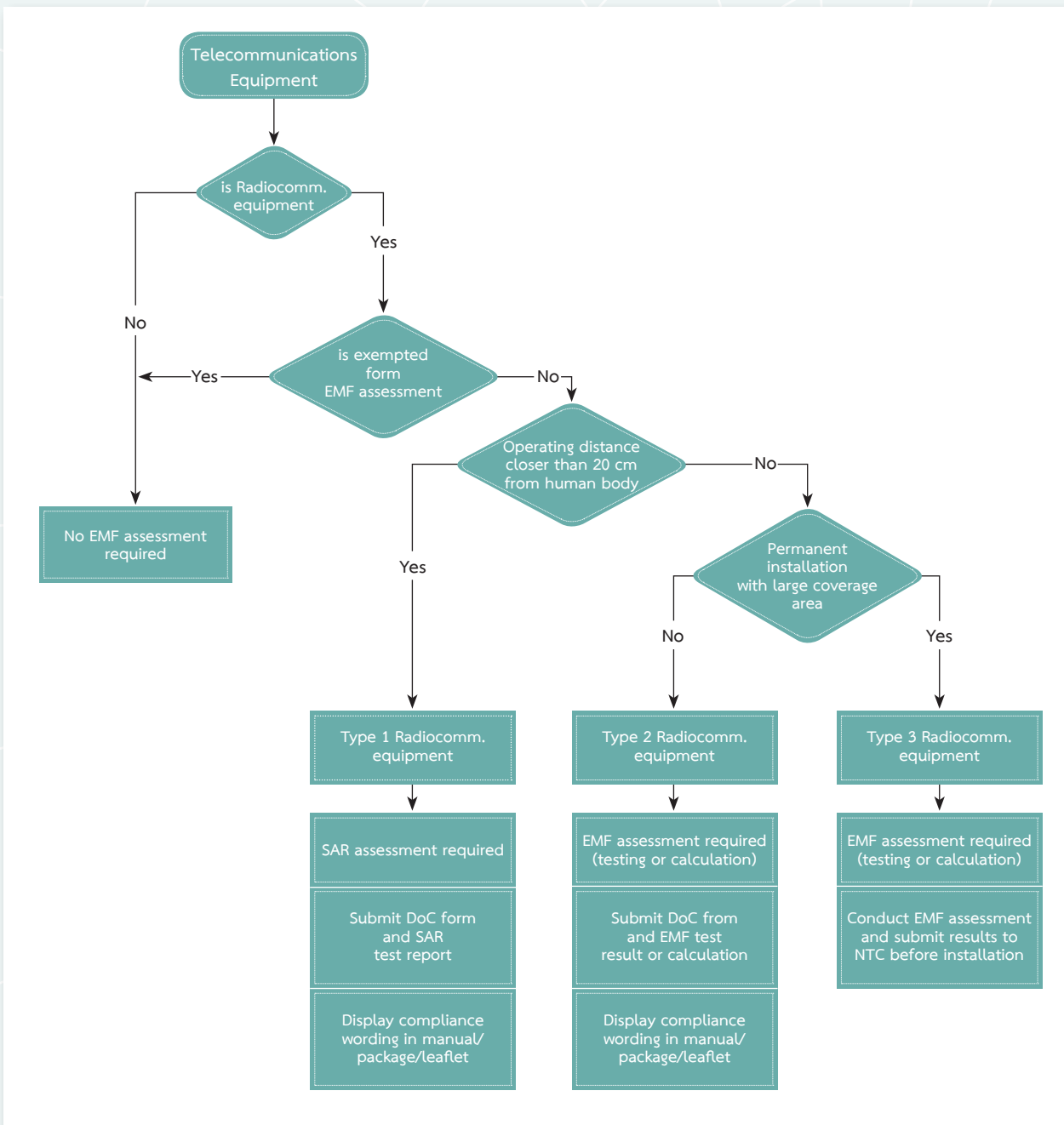
Conformity assessment of telecommunication equipment

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3.1 Classification of telecommunication equipment according to NTC notification on conformity assessment of telecommunication equipment.



3.2 Classification of telecommunication equipment according to NTC notification on rules and measures for regulating EMF exposure to human



3.3 Classification of telecommunication equipment and than conformity assessment according to related NTC/NBTC notification is showing in Annex attached at the end of this document

3.4 Telecommunication Equipment Testing Laboratory recognized by NBTC

3.4.1 Local Testing Laboratory

Test report issued by the office of NBTC or licensed local testing laboratory (according to notification of NTC regarding conformity assessment of telecommunication equipment and rules, procedures and condition on establishing testing laboratory for telecommunication equipment) can be used to demonstrate conformity assessment with the office of NBTC as specified in table below

	Class A	Class B	SDoC
The office of NBTC	✓	✓	✓
Type 1 licensed Testing laboratory	✓	-	✓
Type 2 licensed Testing laboratory	✓	✓	✓
Other testing laboratory	-	-	✓

- 1) The Office of NBTC provide testing service with the scope cover RF requirements of telecommunications equipment
- 2) Testing laboratories licensed by NBTC,
 - 2.1) PTEC: Type 2 licensed testing laboratory, scope covers EMC and Electrical Safety
 - 2.2) Type 2 license testing laboratory, scope of testing covers EMC and Electrical Safety

3.4.2 Foreign testing laboratory

Test report from recognized foreign testing laboratory can be used to demonstrate conformity assessment with the office of NBTC (according to notification on rules for recognizing telecommunication equipment test report from foreign laboratory) as specified in table below

	Class A	Class B	SDoC
Testing laboratory certified by ISO/IEC 17025:2005	✓	✓	✓
Testing laboratory certified by EU Directive 1999/5/EC – Annex V -	✓	✓	✓
Testing laboratory certified by	✓	-	✓
Testing laboratory	✓	-	✓
Other testing laboratory	-	-	✓

The office of NBTC recognize test report of conformance testing laboratory that prescribed by the Commission

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Conformity assessment procedures of the office of NBTC

4.1 Testing

4.1.1 Required documents

	Detail	Remark (✓=Yes) (X=No)
1	Eligibility documents (copy of juristic person's registration/copy of national ID card)	
2	Sample of Equipment with complete accessories for testing	
3	Completely filled application form (Vor - Thor 01)	
4	Product Catalogue	
5	Technical Specifications	
6	Operation Manual / User guide / User manual	
7	Maintenance Manual / Service Manual	
8	Circuit Diagram	
9	Software (if applicable)	
10	Copy of License to trade radiocommunication equipment	
11	Copy of License to make/import radiocommunication equipment	
12	Copy of bill of lading	

4.1.2 fee 20,000 Baht (VAT not included)

4.1.3 application form (Vor - Thor 01)

4.1.4 contact information

Telecommunication Standard and Technology Bureau

The Office of National Broadcasting and Telecommunications Commission

87 Phaholyothin 8 Rd. (Soi Sailom)

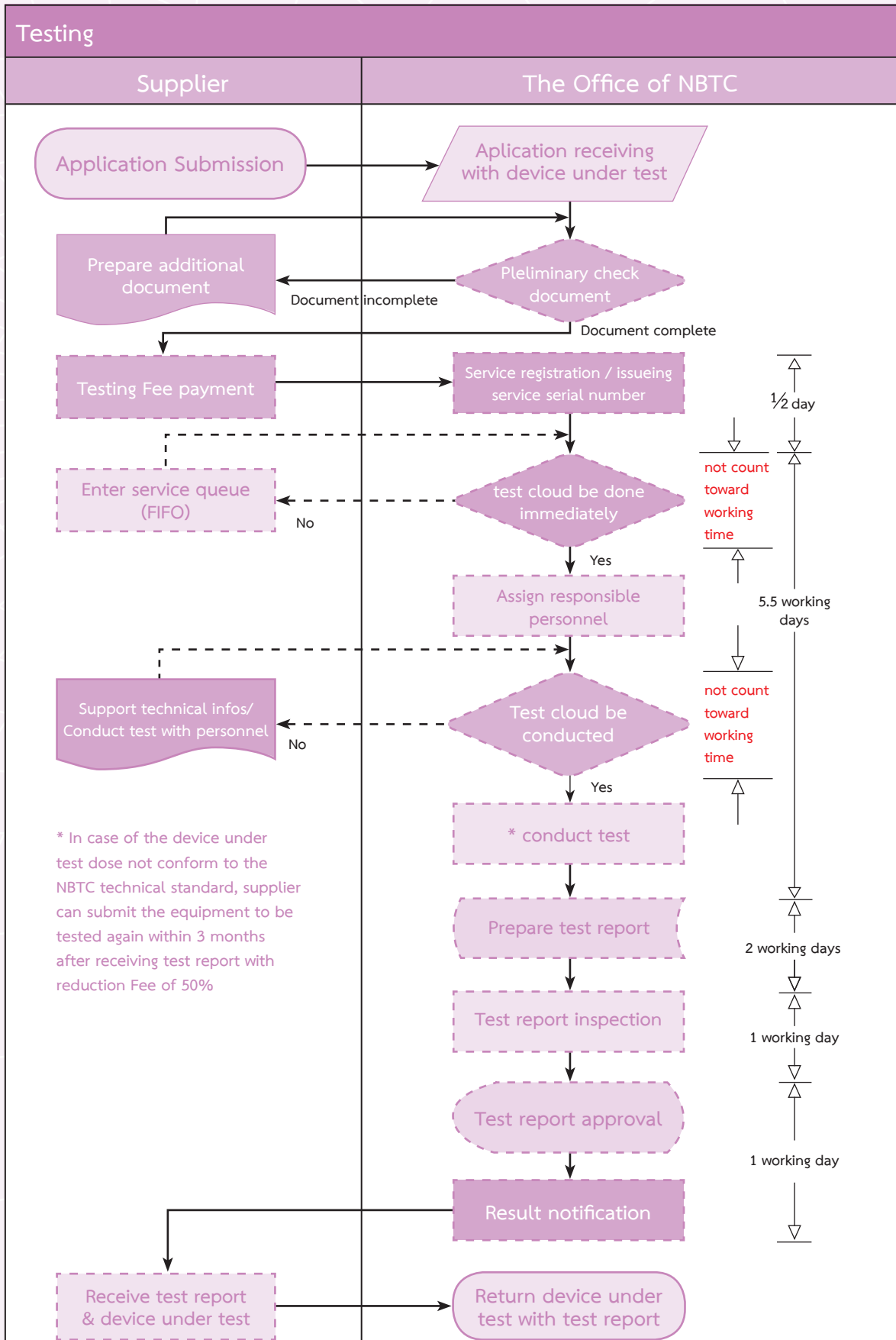
Samsennai, Phayathai, Bangkok 10400

Tel. 0 2271 0151 – 60 ext. 321, 322

Fax. 0 2279 2273

Email: standard@nbt.go.th

4.1.5 Testing procedure



4.2 Registration (Class A equipment)

4.2.1 Required documents

	Detail	Remark (✓=Yes) (X=No)
1	Eligibility documents (copy of Juristic person's registration/copy of national ID card)	
2	Completely filled application form (Vor-Thor 02)	
3	Catalogue Technical Specifications	
4	Documents to demonstrate conformity - Test Report - Approval Certificate - Certificate of Conformity	
5	EMF Declaration of Conformity (DoC) form and supporting documents (as applicable – see Section 2.5)	
6	Copy of NBTC's Approval Certificate (if applicable)	
7	Accreditation Certificate of testing laboratory	
8	Equipment's photograph	

4.2.2 fee 1,000 Baht (VAT not included)

4.2.3 application form (Vor - Thor 02)

4.2.4 contact information

Telecommunication Standard and Technology Bureau

The Office of National Broadcasting and Telecommunications Commission

87 Phaholyothin 8 Rd. (Soi Sailom)

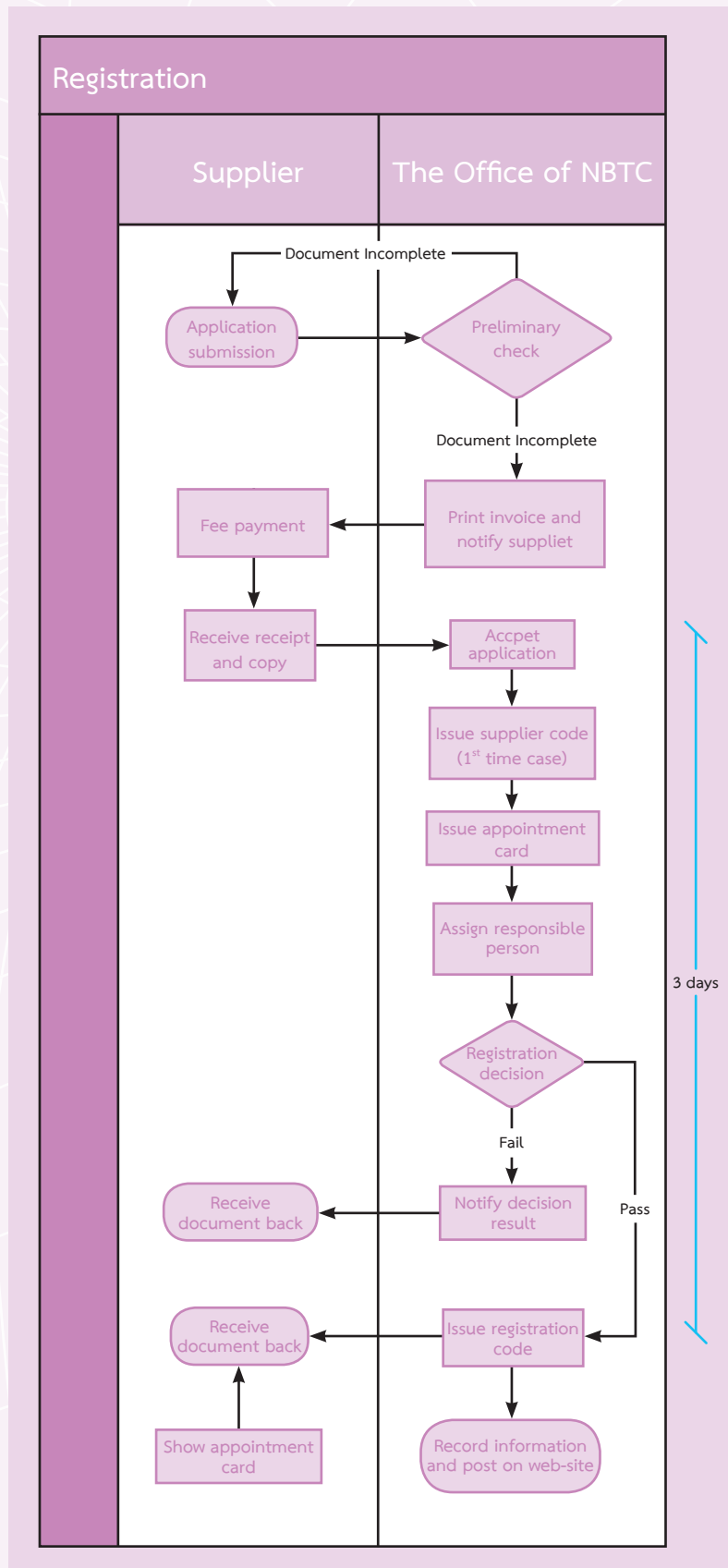
Samsennai, Phayathai, Bangkok 10400

Tel. 0 2271 0151 – 60 ext. 321, 322

Fax. 0 2279 2273

Email: standard@nbt.go.th

4.2.5 Registration procedure



4.3 Certification (Class B equipment)

4.3.1 Required documents

	Detail	Remark (✓=Yes) (X=No)
1	Eligibility documents (copy of juristic person's registration/copy of national ID card)	
2	Completely filled application form (Vor-Thor 03)	
3	Product Catalogue Technical Specifications	
4	Technical Specifications	
5	Copy of NBTC's Approval Certificate (if applicable)	
6	EMF Declaration of Conformity (DoC) form and supporting documents (as applicable – see Section 2.5)	
7	Accreditation Certificate of testing laboratory	
8	Equipment's photograph	

4.3.2 fee 5,000 Baht (VAT not included)

4.3.3 application form (Vor - Thor 03)

4.3.4 contact information

Telecommunication Standard and Technology Bureau

The Office of National Broadcasting and Telecommunications Commission

87 Phaholyothin 8 Rd. (Soi Sailom)

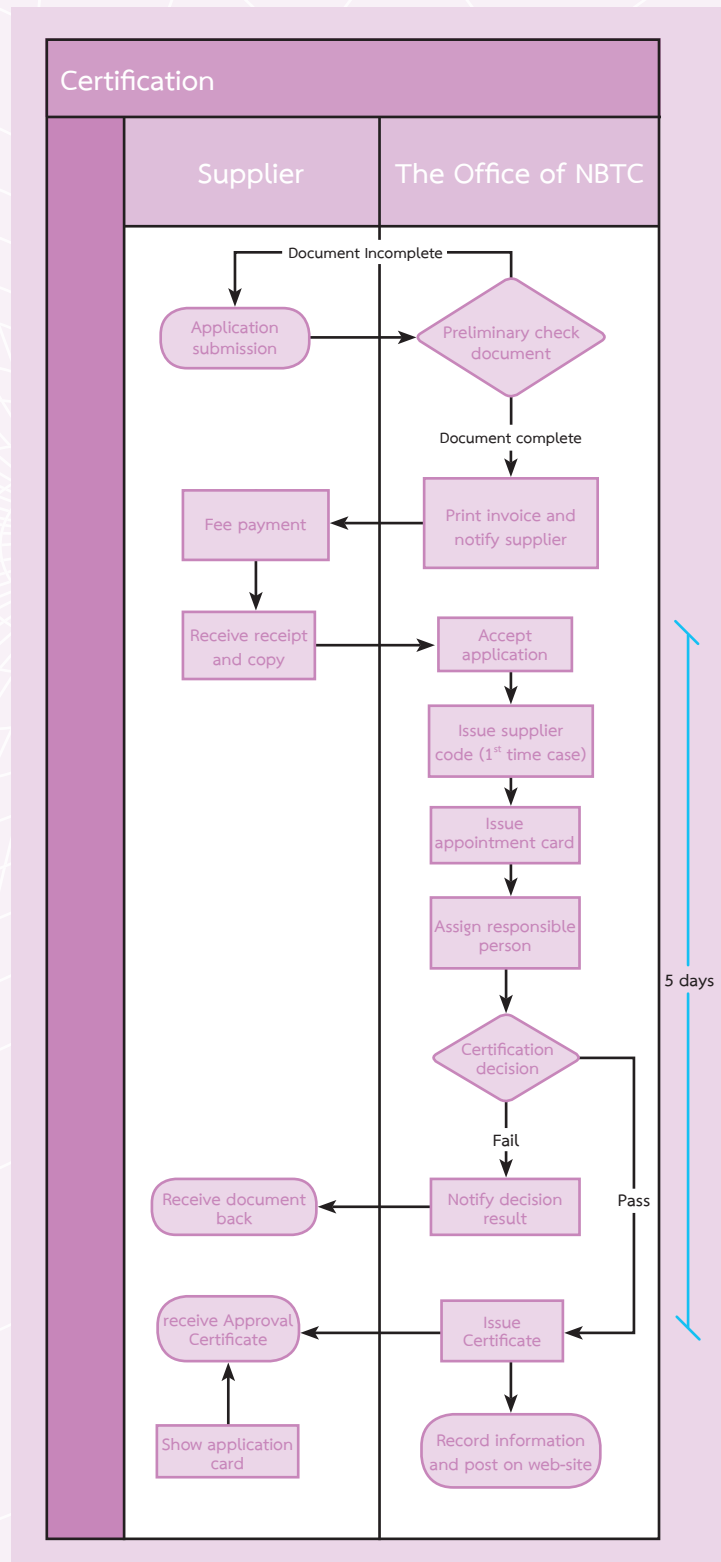
Samsennai, Phayathai, Bangkok 10400

Tel. 0 2271 0151 – 60 ext. 321, 322

Fax. 0 2279 2273

Email: standard@nbt.go.th

4.3.5 Certification procedure



5

Labeling

5.1 Supplier has an obligation to show NTC/NBTC marking of conformity by affixing label on telecommunication equipment:

5.1.1 For Class A equipment:



where YYYYYY is registration number (6 digits)
ZZ is the year of registration (last 2 digits of the year)
XXXX is supplier code (4 digits)

5.1.2 For Class B equipment:



where AAAAAA is certification number (6 digits)
BB is the year of certification (last 2 digits of the year)
XXXX is supplier code (4 digits)

5.2 Labeling requirement

5.2.1 The label shall be Affixed on equipment, and shall be easily legible, visible and cannot be easily removed.



Figure 5 Equipment labeling

5.2.2 In case where label cannot be properly placed on the equipment (e.g. the equipment size is too small), the label shall be shown on the materials that come with the equipment (e.g. package or user manual).

5.3 The Office of NBTC will issue labels to supplier as requested.

5.3.1 Required documents (application for labels)

	Detail	Remark (✓=Yes) (X=No)
1	Eligibility documents (copy of juristic person's registration/copy of national ID card)	
2	Completely filled application form (Chor-Gor 1)	
3	Document to prove number of equipment ordered (Performa invoice / order information)	

5.3.2 fee 1 Baht each (VAT not included)

5.3.3 application forms (Chor-Gor 01)

5.3.4 contact information

Radiocommunication Licensing Bureau

The Office of National Broadcasting and Telecommunications Commission

87 Phaholyothin 8 Rd. (Soi Sailom)

Samsennai, Phayathai, Bangkok 10400

Tel. 0 2271 0151 – 60 ext. 717

Fax. 0 2278 3993

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Supplier's self-labeling

Suppliers can ask for permission to issue and affix labels by themselves.

6.1 Applicant qualification

	Qualification Detail	Remark (✓=pass) (X=fail)
1	being a juristic person registered under Thai law	
2	The equipment must have been registered or certified by office of NBTC, and the supplier shall be one of the following equipment's responsible person <ul style="list-style-type: none">- equipment manufacturer- trademark/brand owner- subsidiary company in Thailand- authorized dealer	
3	has been issued with supplier code from the office of NBTC	
4	be a relevant licensee under the laws on radiocommunications	

6.2 Required documents

	Detail	Remark (✓=pass) (X=fail)
1	Eligibility documents (copy of juristic person's registration)	
2	Power of attorney	
3	Copy of relevant licenses under the laws on radiocommunications	
4	Labeling details	
	4.1 Equipment brand and model	
	4.2 NTC ID.	
	4.3 Amount of labeling	
	4.4 Duration of self labeling	
	4.5 Labeling position (in case of labeling on the equipment)	
	4.6 Evidence proving that labeling on equipment is inappropriate (in case of not labeling on equipment)	

6.3 contact information

Telecommunication Technology and Engineering Bureau
The Office of National Broadcasting and Telecommunications Commission
87 Phaholyothin 8 Rd. (Soi Sailom)
Samsennai, Phayathai, Bangkok 10400
Tel. 0 2271 0151 – 60 ext. 321, 322
Fax. 0 2279 2273
Email: standard@nbtcc.go.th

7

Compliance wording

7.1 Supplier has an obligation to provide compliance wording (stating compliance with NBTC technical standard or technical requirement), using the following text:

“This telecommunication equipment conforms to technical standard NTC/NBTC TS

or

“This telecommunication equipment conforms to NTC/NBTC technical requirement”

7.2 In addition, compliance wording stating compliance with NBTC notification on EMF exposure standard (NTC TS 5001-2550) and a notification on rules and measures for regulating EMF exposure to human must also be provided, using the following text:

Type 1. Radiocommunication equipment operating within 20 cm from human body in normal operating condition. (e.g. handheld cellular mobile terminal)

“This telecommunication equipment has Specific Absorbtion Rate (SAR) ... W/kg which conforms to NTC EMF exposure standard

Type 2. Radiocommunication equipment operating further away more than 20 cm from human body in normal operating condition (e.g. cellular mobile terminal installed in vehicle)

“This telecommunication equipment has EMF radiation conforms to NTC EMF exposure standard

7.3 These compliance wordings shall be shown on package, user manual, or leaflet distributed together with the equipment.

Supplier's Declaration of Conformity: SDOC

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8.1 In case where NTC/NBTC had prescribed technical standard or requirement, but the NTC/NBTC does not require the equipment to be registered or certified, supplier has an obligation to provide written attestation that the equipment conforms to such standard or requirement using Supplier's Declaration of Conformity (SDoC) form.

8.2 Document required to be submitted to the Office of NBTC

	Detail	Remark (✓=Yes) (X=No)
1	Completely filled SDoC form	
2	EMF Declaration of Conformity (DoC) form and supporting documents (as applicable – see Section 12)	

8.3 Supporting documents required to be kept by supplier

	Detail	Remark (✓=Yes) (X=No)
1	Copy of SDoC form	
2	Product Catalog	
3	Technical Specification	
4	test results/test report/inspection report proving compliance with technical standard or technical requirements	
5	test results/test report/Calculation proving compliance with EMF exposure requirements (as applicable – see Section 12)	

8.4 Compliance wording

8.4.1 Supplier may provide compliance wording, using the following text:

“This telecommunication equipment conforms to technical standard NTC/NBTC TS”

or

“This telecommunication equipment conforms to NTC/NBTC technical requirement”

8.4.2 This compliance wording, if provided, can be shown on package, user manual, or leaflet distributed together with the equipment.

9.1 Supplier has the rights to manufacture, sell, or import telecommunication equipment which has the same technical characteristics as the registered or certified equipment. However this registration or certification is not an exclusive right for the requested supplier.

9.2 Suppliers are obliged to be responsible only for telecommunication equipment they make, sell, or import.

9.3 Supplier shall notify the Office of NBTC in case that the technical characteristic of telecommunication equipment has been modified to be different from the details specified in the registration or certification. The modification in question can be categorized into 2 types:

- The modifications which have no effect on equipment conformity against standard/requirement. In this case, repeating conformity assessment is not required.
- The modifications which have effect on equipment conformity against standard/requirement. In this case, the equipment shall be re-assessed before they can be manufactured, sold, or imported. Example of such modifications include
 - modifications of transmitting antenna
 - modifications of transmitting power or radiation characteristics
 - modification of interface card
 - addition of interface card

9.4 Supplier shall be responsible in case it has been found that the equipment has been modified without prior approval, or the equipment has been manufactured/imported /sold with significantly different technical characteristics from ones previously stated when registered/certified.

9.5 Supplier may be liable for any damage caused by an unsafe product according to other relevant laws.

10

Enforcement measures

The Office of NBTC will conduct post-market enforcement measures by using one or more of following methods:

- 10.1 Inspection of compliance documents from supplier.
- 10.2 Inspection of label and compliance wording requirement at point of sale.
- 10.3 Random inspection and compliance testing of equipment.
- 10.4 Complaint from customer or other suppliers
- 10.5 If a supplier is found to breach or violate the regulatory requirements, the Office

may:

- 10.5.1 Issue written warning.
- 10.5.2 Order the supplier to modify, revise, or stop selling/using the equipment found to be not in conformity with technical standard/requirements.
- 10.5.3 Recommend to the NBTC for withdrawal of conformity assessment result.
- 10.5.4 Fine or judicial proceedings of the accused.



Annex

Classification of Equipment according to Technical Standard and its conformity assessment

Technical Standard/Technical Requirement	Scope covered	Equipment classification	Type of conformity assessment
Land Mobile Equipment			
NTC TS 1001-2553	Radiocommunication equipment operating in land mobile service in the VHF/UHF frequency band	Class B	Base station 8 Mobile station/Handheld 5
NTC TS 1002-2553	Radiocommunication equipment for general public operating in the 78 MHz or 245 MHz frequency band	Class B	Base station 8 Mobile station/Handheld 5
NTC TS 1009-2549	Digital trunked radio system in land mobile service	Class B	Base station 8 Mobile station/Handheld 5
NTC TS 1024-2552	Land Mobile Radiocommunication Equipment in the VHF/UHF Frequency Band for Voice and/or Data Communications	Class B	Base station 8 Mobile station/Handheld 5
Maritime Radiocommunication Equipment			
NTC TS 1021-2550	Radiocommunication equipment operating in maritime mobile	Class B	Coast Station 8

Technical Standard/Technical Requirement	Scope covered	Equipment classification	Type of conformity assessment
	service in the VHF frequency band		Ship Station/Handheld 5
NTC TS 1020-2550	27 MHz CB radiocommunication equipment on board ship	Class B	5
NTC TS 1022-2552	Maritime Mobile Radiocommunication Equipment in the MF/HF Frequency Band	Class B	Ship Station 5
Aeronautical Mobile Equipment			
NTC TS 1003-2553	Radiocommunication equipment operating in aeronautical mobile service in the VHF frequency band	Class B	Base station 8 Mobile station/Handheld 5
NTC TS 1023-2552	VHF Air-Ground Digital Link (VDL) Equipment	Class B	Base station 8
Amateur Radiocommunication Equipment			
NTC TS 1018-2550	Radiocommunication equipment in amateur service	Class B	Base station 8 Mobile station 5
Cellular Mobile Equipment			

Technical Standard/Technical Requirement	Scope covered	Equipment classification	Type of conformity assessment						
NTC TS 1004-2553	User equipment operating in cellular land mobile service using GSM technology	Class B	6						
NTC TS 1008-2549	Base stations/repeaters operating in cellular land mobile service using GSM technology	Class B	8						
NTC TS 1014-2552	Base Station and Repeater in International Mobile Telecommunications (IMT) Service Using IMT-2000 CDMA Direct Spread Technology	Class B	8						
NTC TS 1015-2552	User equipment operating in International Mobile Telecommunications (IMT) Service Using IMT-2000 CDMA Direct Spread Technology	Class B	6						
NTC TS 1016-2549	Base stations/repeaters operating in cellular land mobile service using IMT-2000 CDMA Multi-Carrier (cdma2000) technology	Class B	8						
NTC TS 1017-2549	User equipment operating in cellular land mobile service using IMT-2000 CDMA Multi-Carrier (cdma2000) technology	Class B	6						
Satellite communication equipment									
NTC TS 1019-2551	Antenna of earth station in fixed-satellite service using geo-stationary orbit	Class A	1						
NTC TS 005-2548	Radiocommunication equipment in Global Mobile Personal Communications by Satellite (GMPCS) system	Class A	<table border="1"> <tr> <td>Power ≤ 100mW</td> <td>1</td> </tr> <tr> <td>Power > 100mW</td> <td>Distance from body < 20cm</td> </tr> <tr> <td></td> <td>2</td> </tr> </table>	Power ≤ 100mW	1	Power > 100mW	Distance from body < 20cm		2
Power ≤ 100mW	1								
Power > 100mW	Distance from body < 20cm								
	2								

TELECOMMUNICATION STANDARD AND TECHNOLOGY BUREAU, OFFICE OF THE NATIONAL BROADCASTING AND TELECOMMUNICATIONS COMMISSION, THAILAND
MAY 2014

Technical Standard/Technical Requirement	Scope covered	Equipment classification	Type of conformity assessment																				
Distance from body >= 20cm																							
3																							
Other radiocommunication equipment permitted by NTC.																							
NTC TS 1011-2549	Vehicle radar in the frequency band 76-77 GHz	Class A	Power <= 100mW	1																			
			Power > 100mW	3																			
NTC TS 1010-2550	Radio Frequency Identification (RFID) equipment	Class A /SDoC (as applicable)	<table border="1"> <tr> <td data-bbox="544 250 608 340">Power <= 100mW</td> <td data-bbox="544 340 608 430">9</td> </tr> <tr> <td data-bbox="544 430 608 519">100mW < Power < 150mW</td> <td data-bbox="544 519 608 609">10</td> </tr> <tr> <td data-bbox="544 609 608 698">Dist. From body < 20cm</td> <td data-bbox="544 698 608 788">11</td> </tr> <tr> <td data-bbox="544 788 608 878">Dist. From body >= 20cm</td> <td data-bbox="544 878 608 967">2</td> </tr> <tr> <td data-bbox="544 967 608 1057">0.15W < Power < 150mW</td> <td data-bbox="544 1057 608 1146">3</td> </tr> <tr> <td data-bbox="544 1146 608 1236">Dist. From body >= 20cm</td> <td data-bbox="544 1236 608 1326">9</td> </tr> <tr> <td data-bbox="544 1326 608 1415">Power < 10mW</td> <td data-bbox="544 1415 608 1505">1</td> </tr> <tr> <td data-bbox="544 1505 608 1594">10mW < Power <= 100mW</td> <td data-bbox="544 1594 608 1684">2</td> </tr> <tr> <td data-bbox="544 1684 608 1774">100mW < Power < 1W</td> <td data-bbox="544 1774 608 1863">3</td> </tr> <tr> <td data-bbox="544 1863 608 1953">Dist. From body >= 20cm</td> <td data-bbox="544 1953 608 2042">9</td> </tr> </table>	Power <= 100mW	9	100mW < Power < 150mW	10	Dist. From body < 20cm	11	Dist. From body >= 20cm	2	0.15W < Power < 150mW	3	Dist. From body >= 20cm	9	Power < 10mW	1	10mW < Power <= 100mW	2	100mW < Power < 1W	3	Dist. From body >= 20cm	9
Power <= 100mW	9																						
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0.15W < Power < 150mW	3																						
Dist. From body >= 20cm	9																						
Power < 10mW	1																						
10mW < Power <= 100mW	2																						
100mW < Power < 1W	3																						
Dist. From body >= 20cm	9																						
			13.533-13.567 MHz	9																			
			433.05-434.79 MHz	9																			
			920-925 MHz	9																			
			Power <= 100mW	9																			
			100mW < Power < 0.5 W	10																			
			Dist. From body < 20cm	10																			
			Dist. From body >= 20cm	11																			

Technical Standard/Technical Requirement	Scope covered	Equipment classification	Type of conformity assessment
			20cm 0.5W < power < 4W Dist. From body < 20cm Dist. From body >= 20cm 2.4-2.5 GHz 5 GHz Power <= 100mW Power > 100mw Dist. From body < 20cm Dist. From body >= 20cm 9 9 10 11
NTC TS 1013-2552	Broadband Wireless Access (BWA) radiocommunication equipment using IMT-2000 OFDMA TDD WMAN Technology	Class B	Base Station CPE Power <= 100mW Power > 100mW 8 5 7
NTC. Technical Requirement	Wireless radio broadcast system 420.2 MHz	SDoC	9
NTC. Frequency Plan Technical Requirement	Microwave Fixed Link Equipment	SDoC	12
Low Power Radiocommunication Equipment & Short Range Device			
NTC. Notification on License-Exempt equipment/station clause 2 (2)	Wireless Microphone 88-108 MHz / 165-210 MHz	SDoC	9
NTC TS 006-2548	Wireless microphones 794-806 MHz	Class A	1
NTC Notification on License-Exempt equipment/station	Cordless Phone 1.6-1.8 MHz / 54-74 MHz	SDoC	9

Technical Standard/Technical Requirement	Scope covered	Equipment classification	Type of conformity assessment
clause 2 (3)			
NTC Notification on License-Exempt equipment/station clause 3 (5)	Cordless Phone 1900-1906 MHz	SDoC	9
NTC Technical Requirement	PCT Phone 1906.1-1918.1 MHz	SDoC	9
NTC TS 007-2548	Radio control operating in 72 MHz	Class A	Power <= 100mW 1 Power > 100mW 3
NTC Notification on License-Exempt equipment/station clause 2 (5)	SRD 135 kHz (except RFID)	SDoC	Power <= 100mW 9 Power > 100mW Distance from body < 20cm 10 Distance from body >= 20cm 11
NTC Notification on License-Exempt equipment/station clause 2 (6)	SRD 13.56 MHz (except RFID)	SDoC	9
NTC Notification on License-Exempt equipment/station clause 2 (7) or 3 (6)	SRD 27 MHz	SDoC	Power <= 100mW 9 Power > 100mW Distance from body < 20cm 10 Distance from body >= 20cm 11
NTC Notification on License-Exempt equipment/station clause 2 (8)	SRD 30-50 MHz	SDoC	9
NTC Notification on License-Exempt equipment/station clause 2 (9)	SRD 300-500 MHz	SDoC	9
NTC TS 1012-2551	Broadband Wireless Access (Radio Local Area Network)	SDoC	2.4 GHz band 9

Technical Standard/Technical Requirement	Scope covered	Equipment classification	Type of conformity assessment
	radiocommunication equipment		5 GHz Band Power ≤ 100mW 9 5 GHz Band Power > 100mW 11
NTC Notification on License-Exempt equipment/station clause 2 (10)	SRD 2.4 GHz / Bluetooth (except WLAN)	SDoC	9
NTC Notification on SRD 5 GHz	SRD 5 GHz (except WLAN)	SDoC	Power ≤ 100mW 9 Power > 100mW Distance from body < 20cm 10 Distance from body ≥ 20cm 11
NTC Notification on License-Exempt equipment/station clause 2 (4)	Short range radar devices 5.725-5.875 / 10-10.6 / 24.05-24.25 / 76-81 GHz	SDoC	9
NTC Notification on License-Exempt equipment/station clause 3 (3)	Audio/Video transmission equipment	SDoC	9
Wireline Equipment			
NTC TS 2001-2550	Optical Communication System	SDoC	9
NBTC TS 2002-2555	Narrowband PLC equipment Broadband PLC equipment (In-building)	SDoC Class A	9 1
NTC TS 3001-2555	Electromagnetic Compatibility (EMC)	SDoC	CISPR 22 edition 4.0:2003
NTC TS 4001-2550	Electrical Safety		IEC 60950-1

1) [Class A without DoC](#)

- Submit application for registration with NBTC
 - i. Test results as per technical standard (from accredited lab) or Approval Certificate/Certificate of Conformity
- Affix Label displaying NTC ID.
- Display compliance wording in manual/package/leaflet (against technical standard only)

2) [Class A with DoC \(SAR\) \(type 1\)](#)

- Submit application for registration with NBTC
 - i. Test results as per technical standard (from accredited lab) or Approval Certificate/Certificate of Conformity
 - ii. Completed DoC form and SAR test result (from accredited lab)
- Affix Label displaying NTC ID.
- Display compliance wording in manual/package/leaflet (against technical standard and RF exposure standard)

3) [Class A with DoC \(EMF\) \(type 2\)](#)

- Submit application for registration with NBTC
 - i. Test results as per technical standard (from accredited lab) or Approval Certificate/Certificate of Conformity
 - ii. Completed DoC form and EMF test result (from accredited lab) or Calculation
- Affix Label displaying NTC ID.
- Display compliance wording in manual/package/leaflet (against technical standard and RF exposure standard)

4) [Class A with EMF assessment \(type 3\)](#)

- Submit application for registration with NBTC
 - i. Test results as per technical standard (from accredited lab) or Approval Certificate/Certificate of Conformity
- Affix Label displaying NTC ID.
- Conduct EMF assessment and submit results to NTC before installation

5) Class B without DoC

- Submit application for certification with NBTC
 - i. Test results as per technical standard (from ISO-17025 accredited lab)
- Affix Label displaying NTC ID.
- Display compliance wording in manual/package/leaflet (against technical stan-

dard only)

6) Class B with DoC (SAR) (type 1)

- Submit application for certification with NBTC
 - i. Test results as per technical standard (from ISO-17025 accredited lab)
 - ii. Completed DoC form and SAR test result (from accredited lab)
- Affix Label displaying NTC ID.
- Display compliance wording in manual/package/leaflet (against technical stan-

dard and RF exposure standard)

7) Class B with DoC (EMF) (type 2)

- Submit application for certification with NBTC
 - i. Test results as per technical standard (from ISO-17025 accredited lab)
 - ii. Completed DoC form and EMF test result (from accredited lab) or Cal-
- Affix Label displaying NTC ID.
- Display compliance wording in manual/package/leaflet (against technical stan-

culatation

dard and RF exposure standard)

8) Class B with EMF assessment (type 3)

- Submit application for certification with NBTC
 - i. Test results as per technical standard (from ISO-17025 accredited lab)
- Affix Label displaying NTC ID.
- Conduct EMF assessment and submit results to NTC before installation

9) SDoC without DoC

- Submit completed SDoC form to NBTC
- Required test results proving conformity (kept by supplier)
 - i. Test results as per technical standard

10) [SDoC with DoC \(SAR\) \(type 1\)](#)

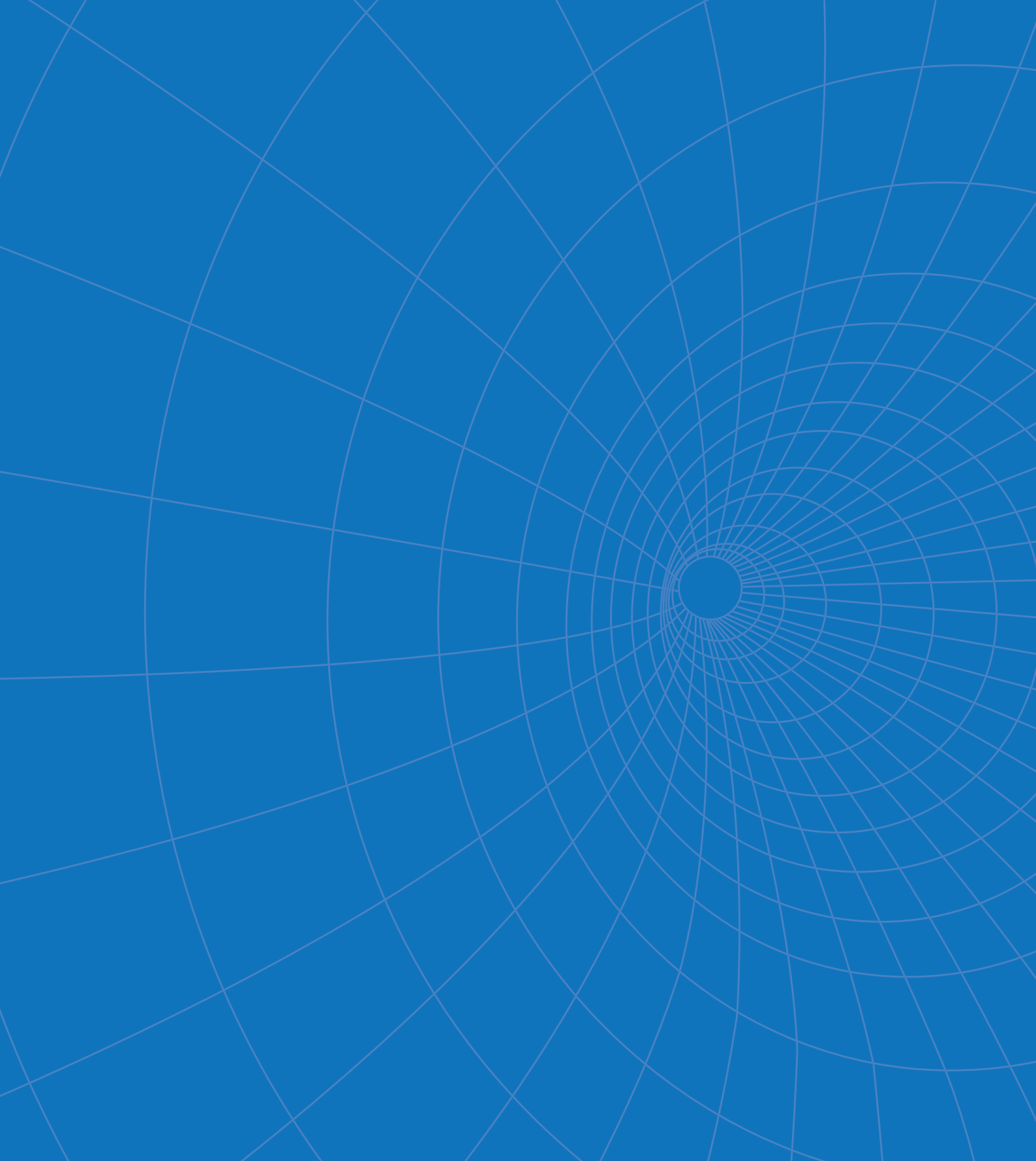
- Submit completed SDoC form to NBTC
- Submit completed DoC form to NBTC
- Required test results proving conformity (kept by supplier)
 - i. Test results as per technical standard
 - ii. SAR test result

11) [SDoC with DoC \(EMF\) \(type 2\)](#)

- Submit completed SDoC form to NBTC
- Submit completed DoC form to NBTC
- Required test results proving conformity (kept by supplier)
 - i. Test results as per technical standard
 - ii. EMF test result or calculation

12) [SDoC with EMF assessment \(type 3\)](#)

- Submit completed SDoC form to NBTC
- Required test results proving conformity (kept by supplier)
 - i. Test results as per technical standard
- Conduct EMF assessment and submit results to NBTC before installation



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