



TELECOMMUNICATION EQUIPMENT TESTING LICENSE

License No. 002

This License is to certify that

ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT

has been granted by The National Broadcasting and Telecommunications Commission

to establish a testing laboratory: Type II
and conduct tests for telecommunication equipment
as appeared in the testing scope

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(clinical professor Sarana Boonbaichaiyapruck)
Chairman of The National Broadcasting
and Telecommunications Commission

Office of The National Broadcasting and Telecommunications Commission

Annex to License No. 002

Scope of Testing

Laboratory Name: Electrical and Electronic Institute, Foundation for Industrial Development

Premises: Bangpoo Industrial Estate, Soi 8, 975 Moo 4, Sukhumvit Road, km.37, Praeksa, Muang, Samutprakarn 10280

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
1	Radiocommunication equipment Used in the Land Mobile Service in the VHF/UHF Frequency Bands	Electrical Safety Requirements NBTC TS 1001-2564: clause 4.1	TIS 1561-2556 IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009 + A2: 2013 IEC 62368-1:2018 (Ed.3.0) TIS 62368 PART 1-2563
2	Radiocommunication equipment for General Public Use in the 78-79 MHz or 245-247 MHz Frequency Band	Electrical Safety Requirements NTC TS 1002-2561: clause 5.1	TIS 1561-2556 IEC 60950-1 edition 2.0: 2005 + A1: 2009
3	Radiocommunication equipment Used in Aeronautical Mobile Service in the VHF Frequency Band	Electrical Safety Requirements NTC TS 1003-2553: clause 4.1	IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009
4	Radiocommunication equipment for User equipment in Cellular Land Mobile Service Using GSM	Electrical Safety Requirements NBTC TS 1004-2560 clause 2.2	TIS 1561-2556 TIS 2217-2548 IEC 60950-1 edition 2.0: 2005 + A1: 2009
5	Radiocommunication equipment for wireless microphone	Electrical Safety Requirements NBTC TS 1006-2560: clause 3	TIS 1561-2556 IEC 60950-1 edition 2.0: 2005 + A1: 2009

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
6	Radiocommunication equipment for Base Station and Repeater in Cellular Land Mobile Service Using GSM Technology	Electrical Safety Requirements NTC TS 1008-2549: clause 2.2	IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009
7	Radiocommunication equipment for Digital Trunked Radio System in the Land Mobile Service	Electrical Safety Requirements NBTC TS 1009-2562: clause 2.2.1	TIS 1561-2556 IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009 IEC 62368-1:2018 (Ed.3.0)
8	Radio Frequency Identification (RFID) equipment	Radio frequency requirements NBTC TS 1010-2560: clause 2.1	FCC part 15 subpart C
		Electrical Safety Requirements NBTC TS 1010-2560: clause 2.2.1	TIS 1561-2556 IEC 60950-1 edition 2.0: 2005 + A1: 2009 + A2: 2013
		Radiation Exposure Requirements NBTC TS 1010-2560: clause 2.2.2	NTC TS 5001 – 2550
9	Vehicle Radar equipment in the Frequency Range 76 - 77 GHz	Electrical Safety Requirements NBTC TS 1011-2560: clause 2.2	TIS 1561-2556 IEC 60950-1 edition 2.0: 2005 + A1: 2009
10	Radiocommunication equipment for Broadband Wireless Access (BWA) Service using IMT-2000 OFDMA TDD WMAN Technology	Electrical Safety Requirements NTC TS 1013-2552: clause 2.2	IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009
11	Radiocommunication equipment for Base Station and Repeater in International Mobile Telecommunications (IMT)	Electrical Safety Requirements NBTC TS 1014-2565: clause 3.3	IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009 IEC 62368-1:2018 (Ed.3.0) TIS 62368 PART 1-2563

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
	Service Using IMT-2000 CDMA Direct Spread Technology		
12	Radiocommunication equipment for User Equipment in International Mobile Telecommunications (IMT) Using IMT-2000 CDMA Direct Spread	Electrical Safety Requirements NBTC TS 1015-2560 clause 2.2	TIS 1561-2556 TIS 2217-2548 IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009
13	adiocommunication equipment Used in Maritime for 27 MHz	Electrical Safety Requirements NBTC TS 1020-2560: clause 4.1	TIS 1561-2556 IEC 60950-1 edition 2.0: 2005 + A1: 2009 + A2:2013
14	Radiocommunication equipment Used in Maritime Mobile Service in the VHF Frequency Band	Electrical Safety Requirements NBTC TS 1021-2564: clause 4.1	TIS 1561-2556 IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009 IEC 62368-1:2018 (Ed.3.0) TIS 62368 PART 1-2563
15	Radiocommunication equipment Used in Maritime Mobile Service in the MF/HF Frequency Band	Electrical Safety Requirements NBTC TS 1022-2562: clause 4.1	TIS 1561-2556 IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009 IEC 62368-1:2018 (Ed.3.0)
16	VHF Air-Ground Digital Link (VDL) equipment	Electrical Safety Requirements NTC TS 1023-2552: clause 4.1	IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009
17	Radiocommunication equipment Used in Land Mobile Service in the VHF/UHF Frequency Band for Voice and/or Data Communications	Electrical Safety Requirements NBTC TS 1024-2564: clause 4.1	TIS 1561-2556 IEC 60950-1 edition 2.0:2005-12 IEC 60950-1 edition 2.2:2013-05 + A1: 2009 + A2: 2013 IEC 62368-1:2018 (Ed.3.0) TIS 62368 PART 1-2563

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
18	Radiocommunication equipment for Short Range Devices using frequency 57 – 66 GHz in Wireless Local Area Network (WLAN) or Wireless Personal Area Network (WPAN)	Electrical Safety Requirements NBTC TS 1025-2557 clause 2.2	TIS 1561-2556
19	Radiocommunication equipment for Base Station and Repeater in International Mobile Telecommunications (IMT) Services using Evolved Universal Terrestrial Radio Access (E-UTRA) Technology	Electrical Safety Requirements NBTC TS 1026-2565 clause 3.3	TIS 1561-2556 IEC 60950-1 edition 2.0: 2005 + A1: 2009 IEC 62368-1:2018 (Ed.3.0) TIS 62368 PART 1-2563
20	Radiocommunication equipment for User Equipment in International Mobile Telecommunications (IMT) using Evolved Universal Terrestrial Radio Access (E-UTRA) Technology	Electrical Safety Requirements NBTC TS 1027-2560 clause 3.2	TIS 1561-2556 TIS 2217-2548 IEC 60950-1 edition 2.0: 2005 + A1: 2009
21	Radiocommunication equipment for Base Unit using On-site Paging system	Electrical Safety Requirements NBTC TS 1028-2558 clause 4.2	TIS 1561-2556 IEC 60950-1 edition 2.0: 2005 + A1: 2009
22	Radiocommunication equipment Used in Land Mobile Service in the MF/HF Frequency Band	Electrical Safety Requirements NBTC TS 1030-2559 clause 5	TIS 1561-2556 IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
23	Radiocommunication equipment Used for fixed service in frequency 57 – 66 GHz	Electrical Safety Requirements NBTC TS 1031-2565 clause 4	TIS 1561-2556 IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009 IEC 62368-1:2018 (Ed.3.0) TIS 62368 PART 1-2563
24	Radiocommunication equipment for in radio amateur	Electrical Safety Requirements NBTC TS 1032-2560 clause 5	TIS 1561-2556 IEC 60950-1 edition 2.0: 2005 + A1: 2009
25	Radiocommunication equipment for non Radio Frequency Identification: RFID using frequency 920 – 925 MHz	Radio Frequency Requirements NBTC TS 1033-2560 clause 2.1, 2.2, 2.3	FCC part 15 subpart C
		Electrical Safety Requirements NBTC TS 1033-2560 clause 2.4.1	TIS 1561-2556 IEC 60950-1 edition 2.0: 2005 + A1: 2009
		Radiation Exposure Requirements NBTC TS 1033-2560 clause 2.4.2	NTC TS 5001 – 2550
26	Radiocommunication equipment for Ultra-wideband using frequency 1.6 – 10.6 GHz	Electrical Safety Requirements NBTC TS 1034-2561 clause 2.2	TIS 1561-2556 IEC 60950-1 edition 2.0: 2005 + A1: 2009 IEC 62368-1:2018 (Ed.3.0)
27	Radiocommunication equipment for Using the 2.4 GHz and 5 GHz Frequency Band	Radio frequency requirements NBTC TS 1035-2562 clause 2.1	FCC part 15 subpart C FCC part 15 subpart E
		Electrical Safety Requirements NBTC TS 1035-2562 clause 2.2.1	TIS 1561-2556 IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009 IEC 62368-1:2018 (Ed.3.0)
		Radiation Exposure Requirements NBTC TS 1035-2562 clause 2.2.2	NTC TS 5001 – 2550

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
28	Radiocommunication equipment for International Mobile Telecommunications (IMT) using Technology IMT-2020	Electrical Safety Requirements NBTC TS 1036-2563 clause 3.2	TIS 1561-2556 IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009 IEC 62368-1:2018 (Ed.3.0)
29	Radiocommunication equipment for base International Mobile Telecommunications (IMT) Using Technology IMT-2020	Electrical Safety Requirements NBTC TS 1037-2563 clause 3.2	TIS 1561-2556 IEC 60950-1 edition 1.0: 2001 IEC 60950-1 edition 2.0: 2005 + A1: 2009 IEC 62368-1:2018 (Ed.3.0)
30	Radiocommunication equipment for using 5.925-6.425 GHz base unit/access point and mobile/portable unit	Radio Frequency Requirements NBTC TS 1039 - 2566 clause 2.1	FCC Part 15 subpart E Radio frequency device
		Electrical Safety Requirements NBTC TS 1039 - 2566 clause 2.2.1	IEC 62368-1:2018 (Ed.3.0) TIS 62368 PART 1-2563
		Radiation Exposure Requirements NBTC TS 1039 - 2566 clause 2.2.2	NTC TS 5001 – 2550
31	PLC equipment (Narrowband PLC)	Electrical Safety Requirements NBTC TS 2002-2555 clause 2.2	IEC 60950-1 edition 1.0: 2001
32	PLC equipment (Broadband PLC (In-building))	Conducted disturbance 150 kHz – 30 MHz Radiated disturbance 30 MHz – 1 GHz NBTC TS 2002-2555: clause 3.1.1, 3.1.2-1), 3.1.3-1), 3.1.3-2)	TIS 1956-2553 CISPR 22 edition 6.0:2008 CISPR 32:2015
		Electrical Safety Requirements NBTC TS 2002-2555 clause 3.2	IEC 60950-1 edition 1.0:2001 IEC 60950-1 edition 2.0:2005+ A1:2009
		Electromagnetic compatibility/ disturbance requirements) NBTC TS 2002-2555 clause 3.1	TIS 1956-2553 CISPR 22 Edition 6.0: 2008 FCC part 15

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
33	<ul style="list-style-type: none"> - Telephone - Facsimiles - Key Telephone - Modem - Data Terminal Equipment - PABX - xDSL equipment 	<p>Conducted disturbance 150 kHz - 30 MHz</p> <p>Radiated disturbance 30 MHz - 6 GHz</p> <p>NBTC TS 3001-2561 clause 2</p>	<p>TIS 1956-2553</p> <p>CISPR 22 edition 6.0:2008</p> <p>CISPR 32:2015</p>
34	<ul style="list-style-type: none"> - Telephone - Facsimiles - Key Telephone - Modem - Data Terminal Equipment - PABX - xDSL equipment - Telecommunication Equipment (Annex NBTC TS 4001-2561) 	<p>Electrical Safety Requirements</p> <p>NBTC TS 4001-2561 clause 2</p>	<p>TIS 1561-2556</p> <p>IEC 60950-1 edition 2.0: 2005 + A1: 2009</p> <p>IEC 62368-1:2018 (Ed.3.0)</p>
35	standard for the use of Radiocommunication Equipment on Human Health)	<p>Radiation Exposure Requirements</p> <p>NTC TS 5001 – 2550 Except clause 6.1</p>	NTC TS 5001 – 2550