



TELECOMMUNICATION EQUIPMENT TESTING LICENSE

License No. 001

This License is to certify that

Electrical and Electronic Products Testing Center
National Science and Technology Development Agency

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

Date of Issue 6 November 2023

Valid Until 5 November 2026

(Clinical Professor Sarana Boonbaichaiyapruck, MD.)
Chairman of The National Broadcasting
and Telecommunications Commission

Office of The National Broadcasting and Telecommunications Commission

— 87 Phaholyothin Soi 8, Phayathai, Bangkok 10400, THAILAND

Tel. 0 2670 8888 Fax. 0 2271 3518

Annex to License Certification No. 001

Scope of Testing

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

Premises: 141 Thailand Science Park, Paholyothin Road, Klong 1, Klong Luang, Pathumthani 12120, Thailand.

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	Transmitter and Receiver NBTC TS 1001-2564: clause 2 and 3	ETSI EN 300 086 V2.1.2 (2016-08)
		Electrical Safety Requirements NBTC TS 1001-2564: clause 4.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1001-2564: clause 4.2	NTC TS 5001-2550
2	Radiocommunication equipment for General Public Use in the 78 MHz or 245 MHz Frequency Band	Transmitter and Receiver NBTC TS 1002-2561: clause 3 and 4	NBTC TS 1002-2561 ETSI EN 300 086-1 V1.4.1 (2010-06)
		Electrical Safety Requirements NBTC TS 1002-2561 clause 5.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1002-2561 clause 5.2	NTC TS 5001-2550
3	Radiocommunication equipment Used in Aeronautical Mobile Service in the VHF Frequency Band	Electrical Safety Requirements NTC TS 1003-2553 clause 4.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NTC TS 1003-2553 clause 4.2	NTC TS 5001-2550
4	Radiocommunication equipment for User equipment in Cellular Land Mobile Service Using GSM	Radio Frequency Requirements NBTC TS 1004-2560: clause 2.1	NBTC TS 1004-2560 ETSI TS 151 010-1 V13.5.0 (2017-11) 3GPP TS 51.010-1 version 13.5.0 release 13

Date of Issue 6 November 2023

Valid Until 5 November 2026

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
		Electrical Safety Requirements NBTC TS 1004-2560 clause 2.2	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 IEC 62133 edition 1.0: 2002-10 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1004-2560 clause 2.3	NTC TS 5001-2550
		NBTC TS 1004-2560 clause 3	TISI 2217-2548 IEC 62133 edition 1.0: 2002-10
5	Radiocommunication equipment for wireless microphone	Radio Frequency Requirements NBTC TS 1006-2560 clause 2	NBTC TS 1006-2560 ETSI EN 300 422-1 V2.1.2 (2017-01)
		Electrical Safety Requirements NBTC TS 1006-2560 clause 3	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
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	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NTC TS 1008-2549 clause 2.3	NTC TS 5001-2550
7	Radiocommunication equipment for Digital Trunked Radio System in the Land Mobile Service	Electrical Safety Requirements NBTC TS 1009-2562 clause 2.2	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1009-2562 clause 2.3	NTC TS 5001-2550
8	Radio Frequency Identification (RFID) equipment	Requirements for radiocommunication equipment operating in the 135 kHz NBTC TS 1010-2560: clause 2.1.1	ETSI EN 300 330-1 V1.8.1 (2015-03) NBTC TS 1010-2560

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
		Requirements for radiocommunication equipment operating in the 13.553-13.567 MHz NBTC TS 1010-2560: clause 2.1.2	ETSI EN 300 330-1 V1.8.1 (2015-03) NBTC TS 1010-2560
		Requirements for radiocommunication equipment operating in the 433.05 – 434.79 MHz NBTC TS 1010-2560: clause 2.1.3	ETSI EN 300 220-1 V3.1.1 (2017-02) NBTC TS 1010-2560
		Requirements for radiocommunication equipment operating in the 920-925 MHz NBTC TS 1010-2560: clause 2.1.4	ETSI EN 302 208 V3.1.1 (2016-11) NBTC TS 1010-2560
		Requirements for radiocommunication equipment operating in the 2.4-2.5 GHz NBTC TS 1010-2560: clause 2.1.5	FCC Part 15 Subpart C NBTC TS 1010-2560
		Requirements for radiocommunication equipment operating in the 5 GHz NBTC TS 1010-2560: clause 2.1.6	FCC Part 15 Subpart C NBTC TS 1010-2560
		Electrical Safety Requirements NBTC TS 1010-2560: clause 2.2.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		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	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1011-2560 clause 2.3	NTC TS 5001-2550

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
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	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NTC TS 1013-2552 clause 2.3	NTC TS 5001-2550
11	Radiocommunication equipment for Base Station and Repeater in International Mobile Telecommunications (IMT) Service Using IMT-2000 CDMA Direct Spread Technology	Electrical Safety Requirements NBTC TS 1014-2565: clause 3.3	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1014-2565 clause 3.4	NTC TS 5001-2550
12	Radiocommunication equipment for User Equipment in International Mobile Telecommunications (IMT) Using IMT-2000 CDMA Direct Spread	Radio Frequency Requirements NBTC TS 1015-2560: clause 2.1	NBTC TS 1015-2560
		Electrical Safety Requirements NBTC TS 1015-2560: clause 2.2	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		NBTC TS 1015-2560: clause 3	TISI2217-2548 IEC 62133 edition 1.0:202-10
		Radiation Exposure Requirements NBTC TS 1015-2560 clause 2.3	NTC TS 5001-2550
13	radiocommunication equipment for 27 MHz Citizen Band on board ship	Electrical Safety Requirements NBTC TS 1020-2564 clause 4.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1020-2564 clause 4.2	NTC TS 5001-2550
14	Radiocommunication equipment Used in Maritime Mobile Service in the VHF Frequency Band	Electrical Safety Requirements NBTC TS 1021-2564 clause 4.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
		Radiation Exposure Requirements NBTC TS 1021-2564 clause 4.2	NTC TS 5001-2550
15	Radiocommunication equipment Used in Maritime Mobile Service in the MF/HF Frequency Band	Electrical Safety Requirements NBTC TS 1022-2562 clause 4.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1022-2562 clause 4.2	NTC TS 5001-2550
16	VHF Air-Ground Digital Link (VDL) equipment	Electrical Safety Requirements NBTC TS 1023-2552 clause 4.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NTC TS 1023-2552 clause 4.2	NTC TS 5001-2550
17	Radiocommunication equipment Used in Land Mobile Service in the VHF/UHF Frequency Band for Voice and/or Data Communications	Transmitter and Receiver NBTC TS 1024-2564: clause 2 and 3	ETSI EN 301 166 V2.1.1 (2016-11)
		Electrical Safety Requirements NBTC TS 1024-2564 clause 4.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1024-2564 clause 4.2	NTC TS 5001-2550
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	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1025-2557 clause 2.3	NTC TS 5001-2550
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	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1026-2565 clause 3.4	NTC TS 5001-2550

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
20	Radiocommunication equipment for User Equipment in International Mobile Telecommunications (IMT) using Evolved Universal Terrestrial Radio Access (E-UTRA) Technology	Radio Frequency Requirements NBTC TS 1027-2560: clause 3.1	NBTC TS 1027-2560
		Electrical Safety Requirements NBTC TS 1027-2560 clause 3.2	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1027-2560 clause 3.3	NTC TS 5001-2550
		NBTC TS 1027-2560: clause 4	TISI2217-2548 IEC 62133 edition 1.0:2002
21	Radiocommunication equipment for Base Unit using On-site Paging system	Electrical Safety Requirements NBTC TS 1028-2558 clause 4.2	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1028-2558 clause 4.3	NTC TS 5001-2550
22	Radiocommunication equipment for Pocket Unit using On-site Paging system	Radiation Exposure Requirements NBTC TS 1029-2558 clause 4.2	NTC TS 5001-2550
23	Radiocommunication equipment for in Maritime Mobile Service in the MF/HF Bands	Electrical Safety Requirements NBTC TS 1030-2559 clause 5	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1030-2559 clause 6	NTC TS 5001-2550
24	Radiocommunication equipment Used for fixed service in frequency 57 – 66 GHz	Electrical Safety Requirements NBTC TS 1031-2565 clause 4	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
25	Radiocommunication equipment for in radio amateur	Electrical Safety Requirements NBTC TS 1032-2560 clause 5	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1032-2560 clause 6	NTC TS 5001-2550

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
26	Radiocommunication equipment for non Radio Frequency Identification: RFID	Equivalent Isotropically Radiated Power: e.i.r.p) NBTC TS 1033-2560 clause 2.1	ETSI EN 300 220-1 V3.1.1 (2017-02) NBTC TS 1033-2560
		Unwanted emissions in the spurious NBTC TS 1033-2560 clause 2.2	ETSI EN 300 220-1 V3.1.1 (2017-02) NBTC TS 1033-2560
		Duty Cycle NBTC TS 1033-2560 clause 2.3.1	ETSI EN 300 220-1 V3.1.1 (2017-02) NBTC TS 1033-2560
		Frequency Hopping Spread Spectrum: FHSS NBTC TS 1033-2560 clause 2.3.2	ETSI EN 300 220-1 V3.1.1 (2017-02) NBTC TS 1033-2560
		Electrical Safety Requirements NBTC TS 1033-2560 clause 2.4.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1033-2560 clause 2.4.2	NTC TS 5001-2550
27	Radiocommunication equipment for Ultra -wideband	Radio frequency requirements NBTC TS 1034 – 2561 clause 2.1.1	ETSI EN 302 065-1 V2.1.1 (2016-11) NBTC TS 1034 – 2561
		Radio frequency requirements NBTC TS 1034 – 2561 clause 2.1.2	FCC Part 15
		Electrical Safety Requirements NBTC TS 1034-2561 clause 2.2	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		NBTC TS 1034-2561 clause 2.3	NTC TS 5001-2550
28	Radiocommunication equipment for 2.4 GHz and 5 GHz	Radio frequency requirements NBTC TS 1035 – 2562 clause 2.1.1	FCC Part 15 ETSI EN 300 328 V2.2.2: 2019-07
		Radio frequency requirements NBTC TS 1035 – 2562 clause 2.1.2	FCC Part 15 ETSI EN 301 893 V2.1.1 (2017-05)
		Radio frequency requirements NBTC TS 1035 – 2562 clause 2.1.3	FCC Part 15 ETSI EN 301 893 V2.1.1 (2017-05)
		Radio frequency requirements NBTC TS 1035 – 2562 clause 2.1.4	FCC Part 15 ETSI EN 302 502 V2.1.1 (2017-03)

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
		Electrical Safety Requirements NBTC TS 1035-2562 clause 2.2.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1035-2562 clause 2.2.2	NTC TS 5001-2550
29	Radiocommunication equipment for International Mobile Telecommunications (IMT) using Technology IMT-2020	Electrical Safety Requirements NBTC TS 1036-2020 clause 3.2	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1036-2020 clause 3.3	NTC TS 5001-2550
		NBTC TS 1036-2020 clause 4	TISI 2217-2548 IEC 62133 edition 1.0: 2002-10
30	Radiocommunication equipment for base International Mobile Telecommunications (IMT) Using Technology IMT-2020	Electrical Safety Requirements NBTC TS 1037-2020 clause 3.2	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1037-2020 clause 3.3	NTC TS 5001-2550
31	Radiocommunication equipment for 5.925 – 6.425 GHz	Radio frequency requirements NBTC TS 1039-2566 clause 2.1	FCC Part 15
		Electrical Safety Requirements NBTC TS 1039-2566 clause 2.2.1	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
		Radiation Exposure Requirements NBTC TS 1039-2566 clause 2.2.2	NTC TS 5001-2550
32	PLC equipment	Electromagnetic Compatibility/Disturbance Requirement NBTC TS 2002-2555 clause 2.1	FCC Part 15 Subpart C
		Electrical Safety Requirements NBTC TS 2002-2555 clause 2.2	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10

No.	Item/Product Tested	Specific Test/Range of Measurement	Standard/Test Method/Technique Used
		Conducted disturbance 150 kHz-30 MHz Radiated disturbance 30 MHz-1 GHz NBTC TS 2002-2555 clause 3.1.1, 3.1.2, 3.1.3	FCC Part 15 Subpart C
		Electrical Safety RequirementsNBTC TS 2002-2555 clause 3.2	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
33	<ul style="list-style-type: none"> - Telephone - Facsimiles - Key Telephone - Modem - Data Terminal Equipment - PABX - xDSL equipment 	Conducted disturbance 150 kHz-30 MHz Radiated disturbance 30 MHz-1 GHz NBTC TS 3001-2561	TISI 1956-2553 CISPR 22 edition 6.0: 2008 CISPR 32 edition 2.0: 2015
		Electrical Safety RequirementsNBTC TS 4001-2561	TISI 1561-2556 IEC 60950-1 edition 2.0: 2005 IEC 60950-1 edition 2.2: 2013 TISI 62368 version 1-2020 IEC 62368-1 Edition 3.0: 2018-10
34	Communication transmission equipment, of which the radiation component is, in normal use, positioned at least 20 centimeters from the human body	Electromagnetic field strength NTC TS 5001-2550	NTC TS 5001-2550
35	Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure	Electromagnetic field strength NTC TS 5001-2550	NTC TS 5001-2550