SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

BAY AREA COMPLIANCE LABORATORIES CORP.
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ELECTRICAL

Valid To: November 30, 2020 Certificate Number: 3297.02

In recognition of the successful completion of the A2LA evaluation process (including an assessment of the organization's compliance with A2LA's EPA ENERGY STAR® Accreditation Program[1,2] requirements), accreditation is granted to this laboratory to perform the following EMC, Product Safety, Radio, Telecommunication, and Lighting tests:

Test Technology:	**Test Method(s)[3]:**
Emissions	
Conducted and Radiated	AS/NZS CISPR 11 (2011)[4]; CISPR 11 (2015)[4]; CNS 13803; EN 55011 (2009+A1:2010, 2016)[4]; KN 11[4]; AS/NZS CISPR 13 (2012); CISPR 13 (2009+A1:2015) (*ancillary equipment only*); CNS 13439; EN 55013 (2013+A1:2016); AS/NZS CISPR 14-1 (2010, 2013); CISPR 14-1 (2005, 2009, 2011+A2:2011); CNS 13783-1; EN 55014-1 (2006, 2006+A1:2009, 2006+A2:2011); KN 14-1; AS/NZS CISPR 15 (2012); CISPR 15 (2013); CISPR 15; EN 55015 (2006+A2:2009); KN 15; CNS 14115; AS/NZS CISPR 22 (2009+A1:2010); CISPR 22 (1999, 2008+A1:2005+A2:2006, 2008); EN 55022 (1994+A1:1995+A2:1997, 1998+A1:2000+A2:2003, 2006+A1:2007, 2010+AC:2011); CISPR 32 (2012)[4]; CISPR 32 (2015)[4]; CISPR 32 Corr. 1 (2016)[4]; EN 55032 (2012+AC:2013)[4]; EN 55032 (2015+Corr. 2016)[4]; AS/NZS CISPR 32 (2015)[4]; VCCI-CISPR 32:2016; TEC-EMI-TEL-001-01 (Feb 09); KN 32; CNS 13438 (2006) (up to 6 GHz); TCVN 7189 (2009); TCVN 7317 (2003); VCCI V-3 (up to 6 GHz); VCCI V-4 (2010.04); CISPR 25 (2008, 2016); GB 4343.1 (2003); GB 9254 (2008); IEC 61000-2-2 (2002+Amd1 (2017)+Amd2 (2018)); IEC 61000-6-1; AS/NZS 61000.6.3 (2012); EN 61000-6-2 (2005); IEC 61000-6-2 (2016); EN 61000-6-3 (2007+A1:2011+A2:2012); IEC 61000-6-4 (2018); IEEE 1613 (2009); IEEE 1613a (2011); IEEE 1613-1 (2016);

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Test Technology:	**Test Method(s)[3]:**
Emissions (cont'd)	
Conducted and Radiated (cont'd)	ICES-001, Issue 4 (2006) Updated November 2014; ICES-002, Issue 6 (2013) Updated November 2014 and February 2017; ICES-003, Issue 6 (January 2016) Updated April 2017; ICES-005, Issue 4 (2015); ICES-006, Issue 3 (2018); ANSI C63.10:2013; ANSI C63.26:2015; IEEE C63.17 (2006); 47 CFR FCC Part 18 (using FCC OST/MP-5:1986); 47 CFR FCC Part 15, Subpart B (using ANSI C63.4:2014); 47 CFR FCC Part 15, Subpart C (using ANSI C63.10:2013); 47 CFR FCC Part 15, Subpart D (using ANSI C63.17:2013); 47 CFR FCC Part 15, Subpart E (using ANSI C63.10:2013); 47 CFR FCC Part 15, Subpart E (using FCC KDB 905462 D02 (v02)); 47 CFR FCC Part 15, Subpart F (using ANSI C63.10:2013); 47 CFR FCC Part 15, Subpart G (using ANSI C63.10:2013); 47 CFR FCC Part 15, Subpart H (using ANSI C63.10:2013); Access Broadband Over Power Line (Access BPL) (using FCC Order, ET Docket No. 04-37, FCC 04-245); SI 961 Part 6.1 - Electromagnetic Compatibility: Information Technology Equipment - Radio Frequency Interference Characteristics - Limits and Methods of Measurements; SI 961 Part 6.2 - Electromagnetic Compatibility: Information Technology Equipment - Immunity Characteristics - Limits and Methods of Measurements; MIL-STD 461G (*RE102 only*); RTCA/DO-160G Section 21
Harmonics	AS/NZS 2279.1 (2000); AS/NZS 61000-3-2 (2013); EN 61000-3-2 (2014); IEC 61000-3-2 (2014); JIS C 61000-3-2 (2011); KN 61000-3-2
Flicker	AS/NZS 2279.3 (1995); AS/NZS 61000-3-3 (2012); EN 61000-3-3 (2013); IEC 61000-3-3 (2013); AS/NZS 61000-3-11; EN 61000-3-11 (2000); IEC 61000-3-11 (2000); KN 61000-3-3
Immunity	
Electrostatic Discharge (ESD) (*Commercial and Automotive*)	EN 61000-4-2; IEC 61000-4-2 (2009-05)[4]; IEEE C37.90.3 (2001); JIS C 1000-4-2 (1999); KN 61000-4-2; ISO 10605 (2001); ISO 10605 (2008); DC-10614; Ford ES-XW7T-1A278-AC; FMC 1278 (2016); GMW 3097; JIS C 61000-4-2 (2012); RTCA/DO-160G Section 25; CS118
Radiated Immunity	EN 61000-4-3; IEC 61000-4-3; IEEE Std. C37.90.2; ISO 11452-1 (2001, 2002, 2004, 2005); JIS C 1000-4-3 (1997); JIS C 61000-4-3 (2012); KN 61000-4-3; RTCA/DO-160G Section 20 (*Equipment Categories S and T only*);
Electrical Fast Transient / Burst	EN 61000-4-4; IEC 61000-4-4[4]; JIS C 1000-4-4 (1999); JIS C 61000-4-4 (2007); KN 61000-4-4

Test Technology:	**Test Method(s)[3]:**
Immunity (cont'd)	
Surge	EN 61000-4-5; IEC 61000-4-5[4]; IEEE C37.90.1 (2002); IEEE C62.41 Ring Wave (1991); IEEE C62.41-2 (2002); JIS C 1000-4-5 (1999); JIS C 61000-4-5 (2009); KN 61000-4-5
Conducted Immunity	EN 61000-4-6; IEC 61000-4-6[4]; JIS C 1000-4-6 (1999); JIS C 61000-4-6 (2006); KN 61000-4-6; IEC 61000-4-16
Magnetic Field Immunity	EN 61000-4-8; IEC 61000-4-8; JIS C 1000-4-8 (2003); JIS C 61000-4-8 (2003); KN 61000-4-8
Pulse Magnetic Field	EN 61000-4-9 (2011); KN 61000-4-9; IEC 61000-4-9 (2016)
Dips, Short Interrupts, Voltage Variations	EN 61000-4-11; IEC 61000-4-11; JIS C 1000-4-11 (2003); JIS C 61000-4-11 (2008); KN 61000-4-11
Ring Wave	EN 61000-4-12; IEC 61000-4-12
Damped Oscillatory Wave Immunity	IEC 61000-4-18
Automotive EMC	SAE J1113/1_201310; SAE J1113/11_201201; SAE J1113/12_200608; SAE J1113/26_201404; ISO 11452-2 (2004); ISO 11452-7 (2003); ISO 11452-8 (2015); ISO 11452-10 (2009); SAE J1113/4_201404; SAE J1113/13_201502; CISPR 12 (2007+A1:2009); ISO 7637-2 (2011); ISO 16750-2 (2012); CISPR 25 (2008); UN ECE Regulation 10.4:2012; UN ECE Regulation 10.5:2014
Republic of Korea – Technical Requirements	Technical Requirements for Telecommunications Terminal Equipment (RRA Public Notification 2019-4, February 25, 2019); Conformity Assessment Procedure for Telecommunications Terminal Equipment (KS X 3074, KS X 3075, KS X 3076); Standard Test Procedure on the Technical Requirements for Telecommunications Terminal Equipment (RRA Public Notification 2012-17, Sep 28, 2012); Regulations on Radio Equipment (Enforcement Decree of MSIT No. 1, July 26, 2017); Technical Requirements for grounding equipment, customer premise telecom equipment, line equipment and common ducts, etc. (RRA Public Notification 2019-11, July 18, 2019); Unlicensed Radio Equipment Established Without Notice (MSIT Public Notification 2019-105, Dec 23, 2019); Technical Requirements for the Human Protection against Electromagnetic Waves (MSIT Public Notification 2019-4, January 16, 2019);

Test Technology:	**Test Method(s)[3]:**
Republic of Korea – Technical Requirements (cont'd)	Technical Requirements for Measurement and Test Procedure of Specific Absorption Rate (SAR) (RRA Public Notification 2018-18, Dec 7, 2018); Technical Requirements for Measurement of Electromagnetic Field Strength (RRA Public Notification 2019-3, March 4, 2019); Conformity Assessment Procedure of Radio Equipment (KS X 3123); Technical Requirements of Other Service Radio Equipment for Simple Radio Station, Space Station, and Earth Station (RRA Public Notification 2018-26, Nov 13, 2018); Technical Requirements for Radio Equipment for Telecommunication Services (RRA Public Notification 2019-9, Jun 3, 2019); Technical Requirements for Radio Equipment for Maritime Services (RRA Public Notification 2019-13, Aug 16, 2019); Technical Requirements for Radio Equipment for Aeronautical Services (RRA Public Notification 2018-9, Jul 2, 2018); Technical Requirements for Electromagnetic Compatibility (RRA Public Notification 2018-19, October 19, 2018); Test Methods for Electromagnetic Compatibility (RRA Announce 2018-128, December 24, 2018); Notice on Designation and Management of Testing Laboratories for Broadcasting and Communications Equipment (MSIT Public Notification 2019-95, Dec 5, 2019) Technical Requirements for CATV Equipment (MSIT Public Notification 2019-78 Sep 18 2019); KN 11; KN 60601-1-2; KN 41; KN 14-1; KN 14-2; KN 15; KN 301-489-01; KN 301-489-07; KN 301-489-17; KN 301-489-24; KN 301-489-06; KN 301-489-13; KN 301-489-05; KN 301-489-03; KN 301-489-09; KN 301-489-26; KN 301-489-18; KN 301-489-15; KN 301-489-02; KN 301-489-27; KN 301-489-32; KN 301-489-20; KN 62040-2; KN 301-489-50; KN 301-489-52; KN 32; KN 35; KN 17; KN 60945/60533; KN 61000-6-3; KN 61000-6-1; KN 61000-6-4; KN 61000-6-2; KS X 3270; KS X 3271

Test Technology:	**Test Method(s)[3]:**
Product Family Standards	IEC 61326-1 (2012); EN 61326-1 (2013); IEC 61326-2-1 (2012); EN 61326-2-1 (2013); IEC 61326-2-2 (2012); EN 61326-2-2 (2013); EN 61326-2-3 (2013); EN 61326-2-4 (2013); IEC 61326-2-5 (2012); EN 61326-2-5 (2013); IEC 61326-2-6 (2012); EN 61326-2-6; IEC 61326-3-1 Ed. 1.0 (2008-01); EN 60335-1: 2012 +A1+A2; IEC 60335-1:2010+A1+A2; KN 60601-1-2; JIS C 1806-1 (2010); JIS C 1806-2-6 (2012); CNS 14409 (2006); EN 50091-2 (1999); EN 50121-1 (2017); EN 50121-4 (2016); EN 50121-5 (2017); EN 61547 (2009); EN 50130-4 (2011); EN 50370-2 (2003); EN 50412-2-1 (2005); EN 55103-2 (2009); EN 60945 (2004); IEC 60945 (2002); EN 61547 (2009); IEC 61547 (2009); KN 61547; EN 55014-2 (1997+A1:2001+A2:2008); CISPR 14-2 (2015); KN 14-2; EN 55020 (2011); CISPR 20; EN 55024 (2010); EN 55035 (2017); AS/NZS CISPR 24: 2013/AMDT 1:2017; CISPR 24 (2010); CISPR 35 (2016.08); EN 50083-2 (2012); CAN3-C14-M84 (2008); IC LMB-EG-07 (2000); EN 50155 (2007); ATIS-0600015 (2009); GR-1089-CORE, Issue 6; EN 50065-1 (2011; EN 50065-2-2 (2003+A1); KN 35; BS EN 50121-3-2 (2006); BS EN 50121-4 (2006); EN 50121-4 (2016); AREMA Communications and Signals Manual Sections 11.5.1 Item 6 and 11.5.2
Product Safety	
ITAV (*excluding Audio Amplifier Test*)	EN 62368-1 (2014, AC:2017); IEC 62368-1 (2018); UL 62368-1 (2014); CAN/CSA-C22.2 NO. 62368-1; BS EN 62368-1 (2014); CNS 14336-1:2010 ; IEC 62087-1:2015; EN 62087-1:2016
LITE (*excluding, Stress Corrosion, Rough Service Luminaires, UV Radiation, IP Testing, Dust Proof Luminaire Test, Water Proof Luminaire Test, Resistance to Flame Test, Glow-wire Test, and Resistance to Tracking Test*)	AS/NZS 60598.1 (2013); IEC 60598-1 (2017); AS/NZS 60598.2.1 (2014); EN 60598-2-1:1979+A1:1987; AS/NZS 60598.2.4 (2005); EN 60598-2-4 (2018); AS/NZS 60598.2.17 (2006); IEC 60598-2-17 (2017); AS/NZS 60598.2.20 (2018); EN 60598-2-20 (2010); IEC 60598-2-20 (2014); EN 60598-2-3 (2011); IEC 60598-2-3 (2011); AS/NZS 60598.2.6 (1998); EN 60598-2-6 (1995); IEC 60598-2-6 (1994+A1:1996); EN 60598-2-12 (2013); IEC 60598-2-12 (2013); UL 1598 Ed. 3; UL 1993 Ed. 5; UL 8750 Ed. 2; UL 935 Ed. 10; UL 1574 Ed. 3; UL 1598C Ed. 1; UL 153 Ed. 13; UL 1310 Ed. 7; CAN/CSA C22.2 No. 1993-17; CAN/CSA C22.2 No. 250.0 (2013); CAN/CSA C22.2 No. 250.1 (2016); CAN/CSA C 22.2 No. 250.4 (2014); CAN/CSA C22.2 No. 250.13 (2017); C22.2 No. 223 (2015)

Test Technology:	**Test Method(s)[3]:**
Product Safety (cont'd)	
MEAS[4] (*excluding Flammability Test, Ionizing Radiation, UV Radiation, Microwave Radiation, Ultrasonic Pressure, and IP Testing*)	EN 61010-1 (2010); IEC 61010-1:2010+AMD:2016; UL 61010-1 (2012); CAN/CSA C22.2 No. 61010-1-12 UP1 (2012); EN 61010-2-30 (2010); EN 61010-2-081 (2015); IEC 61010-2-081 (2015); EN 61010-2-101 (2017); IEC 61010-2-101-2015; IEC 60730-2-7 (2015); AS/NZS 60968 (2001); EN 60968 (2015); IEC 60968 (2015); EN 60969 (1993); IEC 60969:2016 RLV; EN 60825-1 (2014); IEC 60825-1 (2014); IEC 61347-1 (2017); EN 61347-2-3 (2017); IEC 61347-2-3 (2011); EN 61347-2-11 (2002); IEC 61347-2-13 (2006); AS/NZS 61347.2.2 (2007); EN 61347-2-2 (2012); IEC 61347-2-2 (2011); EN 61326-1 (2013); EN 61426-2 (2013); AS/NZS 61347.2.3 (2004); EN 62040-1 (2008+A1 :2003); EN 62040-1-1 (2004); IEC 62040-1:2012+AMD:2016 CSV (2013); IEC 62053-21 (2003-01); IEC 62053-22:2003+A1:2016; IEC 62053-23:2003+AMD1:2016 CSV; EN 62115:2005/A12:2015; CNS 13803 (2003); QCVN 22:2010/BTTTT; CNS 15285
MED (*excluding Risk Assessment, Defibrillation Protection, Cathode Ray Tube, Hand-transmitted Vibration, Pressure Vessels, X-radiation, Ingress of Water or Particulate Matter, IP Testing, and Protection against Hazards of Ignition of Flammable Anesthetic Mixtures*)	IEC 60601-1 (2012); UL 60601-1 (2006); EN 60601-1 (2006+A1:2013); IES 60601-2-22 (2007+A1:2012); EN 60601-2-22 (2013); CAN/CSA C22.2 No. 60601-1 (2008); ANSI AAMI ES60601-1 (2005/2012); EN 60601-1-2 (2001+A1:2006, 2007); IEC 60601-1-2 (2014); EN 60601-1-2 (2015); IEC 60601-1-2 (2004); YY0505 (2012); JIS T0601-1-2 (2012); KN 60601-1-2 (2008); EN 60601-2-4 (2011); IEC 60601-2-4 (2010); EN 60601-2-10 (2012); IEC 60601-2-18 (2009); IEC 60601-2-27 (2011); EN 60601-2-30 (2010); EN 60601-2-38 (2010); EN 60601-2-24 (2012); IEC 60601-2-24 (2012); IEC 60601-2-37 (2001); IEC 60601-1-6 (2013); GB9706.9 (2008)
OFF[4] (*excluding Cathode Ray Tube, Flammable Liquids, Ionizing Radiation, Effect of UV Radiation on Material, Test to Resistance on Fire, Flammability Test, Impulse Test, and Mandrel Test*)	AS/NZS 60950.1 (2015); EN 60950-1 (2013); CAN/CSA-C22.2 No. 60950-1-07 (R2016); IEC 60950-1 (2005+A1:2009+A2:2013); KS C 60950-1; AC/ACIF S001 (2001); SI 60950 Part 1 (2012); UL 60950-1(2014)

Test Technology:	**Test Method(s)[3]:**
TRON (*excluding Audio Amplifier Test*)	EN 60065 (2014); UL 60065 Ed. 5 (2015); AS/NZS 60065 (2012); KS C IEC 60065 (2013); IEC 60825-1 (2014-05); CAN/CSA-C22.2 NO. 60065:2016
Product Safety (cont'd)	
Tool (*Excluding Lasers exceeding Class 1, Non-coherent light sources with a risk of potential photo-biological harm, LEDs with Risk Group other than 1, IP testing outside of IPX0, Liquid systems, Immersion testing for corrosion*)	EN 62841-1 (2015); IEC 62841-1 (2014)

Radio Communications			
ETSI TS 125 106; ETSI ES 200 674-1; ETSI ES 200 674-2; ETSI EN 300 086; ETSI EN 300 086-1; ETSI EN 300 113; ETSI EN 300 113-2; ETSI EN 300 178; ETSI EN 300 197; ETSI EN 300 198; ETSI EN 300 219; ETSI EN 300 220-1; ETSI EN 300 220-2; ETSI EN 300 220-4; ETSI EN 300 220-3-1; ETSI EN 300 220-3-2; ETSI EN 300 224; ETSI EN 300 224-2; ETSI EN 300 279; ETSI EN 300 296; ETSI EN 300 296-1; ETSI EN 300 328; ETSI ETS 300 329; ETSI EN 300 330; ETSI EN 300 330-1; ETSI EN 300 330-2; ETSI EN 300 341; ETSI EN 300 385; ETSI EN 300 390; ETSI EN 300 394-1; ETSI EN 300 422-1; ETSI EN 300 422-2; ETSI EN 300 422-3; ETSI EN 300 422-4; ETSI EN 300 431; ETSI EN 300 440; ETSI EN 300 440-1; ETSI EN 300 440-2; ETSI ETS 300 445+A1; ETSI ETS 300 446; ETSI EN 300 454-2;	ETSI EN 300 471-2; ETSI ETS 300 487+A1; ETSI EN 300 630; ETSI EN 300 633; ETSI EN 300 639; ETSI EN 300 674-1; ETSI EN 300 674-2-1; ETSI EN 300 674-2-2; ETSI EN 300 718-2; ETSI EN 300 761-1; ETSI EN 300 761-2; ETSI EN 300 783; ETSI EN 301 021; ETSI EN 301 126-1; ETSI EN 301 126-2-1; ETSI EN 301 126-2-2; ETSI EN 301 126-2-3; ETSI EN 301 126-2-4; ETSI EN 301 126-2-5; ETSI EN 301 126-2-6; ETSI EN 301 126-3-1; ETSI EN 301 166; ETSI EN 301 213-1; ETSI EN 301 213-2; ETSI EN 301 213-3; ETSI EN 301 213-4; ETSI EN 301 213-5; ETSI EN 301 357-1; ETSI EN 301 357-2; ETSI EN 301 390; ETSI EN 301 406; ETSI EN 301 428; ETSI EN 301 489-1; ETSI EN 301 489-2; ETSI EN 301 489-3; ETSI EN 301 489-4; ETSI EN 301 489-5; ETSI EN 301 489-6; ETSI EN 301 489-7; ETSI EN 301 489-8; ETSI EN 301 489-9;	ETSI EN 301 489-10; ETSI EN 301 489-11; ETSI EN 301 489-12; ETSI EN 301 489-13; ETSI EN 301 489-14; ETSI EN 301 489-16; ETSI EN 301 489-17; ETSI EN 301 489-18; ETSI EN 301 489-19; ETSI EN 301 489-20; ETSI EN 301 489-22 ETSI EN 301 489-23; ETSI EN 301 489-24; ETSI EN 301 489-25; ETSI EN 301 489-26; ETSI EN 301 489-28; ETSI EN 301 489-31; ETSI EN 301 489-32; ETSI EN 301 489-33; ETSI EN 301 489-34; ETSI EN 301 489-50; ETSI EN 301 489-52; ETSI EN 301 511; ETSI EN 301 751; ETSI EN 301 753; ETSI EN 301 796; ETSI EN 301 797; ETSI EN 301 840-2; ETSI EN 301 843-1; ETSI EN 301 893; ETSI EN 301 908-1; ETSI EN 301 908-2; ETSI EN 301 908-3; ETSI EN 301 908-4; ETSI EN 301 908-5; ETSI EN 301 908-6; ETSI EN 301 908-7; ETSI EN 301 908-8; ETSI EN 301 908-9;	ETSI EN 301 908-10; ETSI EN 301 908-11; ETSI EN 301 908-12; ETSI EN 301 908-13; ETSI EN 301 908-14; ETSI EN 301 908-15; ETSI EN 301 908-16; ETSI EN 301 908-17; ETSI EN 301 908-18; ETSI EN 301 908-19; ETSI EN 302 065-1; ETSI EN 302 065-2; ETSI EN 302 065-3; ETSI EN 302 065-4; ETSI EN 302 186; ETSI EN 302 208; ETSI EN 302 217-2; ETSI EN 302 217-2-2; ETSI EN 302 217-3; ETSI EN 302 217-4-2; ETSI EN 302 264-2; ETSI EN 302 288-2; ETSI EN 302 291-2; ETSI EN 302 326-2; ETSI EN 302 326-3; ETSI EN 302 340; ETSI EN 302 448; ETSI EN 302 502; ETSI EN 302 544-1; ETSI EN 302 544-2; ETSI EN 302 550-2; ETSI EN 302 567; ETSI EN 302 977; ETSI EN 303 413; ETSI EN 303 470; ETSI EN 303 609; EN 50384

Test Technology:	**Test Method(s)[3]:**
Radio Communications (cont'd)	AS/NZS 4268 (2003+A1:2005+A2:2006, 2008, 2012); AS/NZS 4268 (2012+A1:2013), AS/NZS 4268 (2017), Radiocommunications (Short range devices) Standard 2014, Radiocommunications (Short Range Devices) Amendment; Standard 2013 (No. 1), Radiocommunications (Short Range Devices) Amendment Standard (No 2) 2013; AS/NZS 4280.1 (2003), Radiocommunications (406 MHz Satellite Distress Beacons) Standard 2015, Part 1: Marine emergency position-indicating radio beacons (EPIRB) (IEC 61097-2:2002, MOD); AS/NZS 4280.2 (2003), Radiocommunications (406 MHz Satellite Distress Beacons) Standard 2014, Part 2: Personal locator beacons (PLBs); AS/NZS 4281 (2007), Radiocommunications (Cordless Telephone) Standard 2008, Radiocommunications requirements for cordless telephones operating in the 1.7 MHz and between 30 and 41 MHz frequency band; AS/NZS 4295 (2004), Radiocommunications (Analogue Speech (Angle Modulated) Equipment) Standard 2014; AS/NZS 4330 (2006), Radiocommunications (121.5 MHz and 243.0 MHz Emergency Position Indicating Radio Beacons) Standard 2014; AS/NZS 4355 (1995); AS/NZS 4355:2006, Radiocommunications (HF CB and Handphone Equipment) Standard 2008; AS/NZS 4365 (2002); AS/NZS 4365 (2011), Radiocommunications (UHF CB Radio Equipment) Standard 2011 (No.1); AS/NZS 4367 (1996); AS/NZS 4367 (2007), Radiocommunications (Devices Used in the Inshore Boating Radio Services Band) Standard 2008; AS/NZS 4415.1 (2003), Radiocommunications (VHF Radiotelephone Equipment - Maritime Mobile Service) Standard 2014, Part 1: Shipborne equipment and limited coast stations (including DSC) (IEC 61097-7:1996, MOD); AS/NZS 4415.2 (2003), Radiocommunications (VHF Radiotelephone Equipment - Maritime Mobile Service) Standard 2014, Part 2: Major coast stations, limited coast stations, ship stations and handheld stations (non DSC) (ETS 300 162:1998, MOD); AS/NZS 4582 (2004), Radiocommunications (MF and HF Radiotelephone Equipment - International Maritime Mobile Service) Standard 2014; AS/NZS 4770 (2000) Radiocommunications (MF and HF equipment - Land Mobile Service) Standard 2003 and 2014; AS/NZS 4583 (1999); AS/NZS 4583(2010) + A1, Radiocommunications (118 MHz to 137 MHz Amplitude Modulated Equipment - Aeronautical Radio Service) Standard 2012; AS/NZS 4768.1 (2006); AS/NZS 4768.2 (2003); AS/NZS 4769.1 (2000), Radiocommunications (Paging Service Equipment) Standard 2014, Part 1: Angle modulated equipment; AS/NZS 4769.2 (2000), Radiocommunications (Paging Service Equipment) Standard 2002, Part 2: Amplitude modulated equipment; ETSI EN 301 406, Radiocommunications (Digital Cordless Communications Devices - DECT Devices) Standard 2007; ARIB Standard STD-T66, Version 3.5 (2010); ARIB Standard STD-T67, Version 1.3 (2007); HKCA 1001, Issue 5 (2010); HKCA 1002, Issue 5 (2003); HKCA 1002, Issue 6 (2008); HKCA 1003, Issue 4 (2003);

Test Technology:	**Test Method(s)[3]:**
Radio Communications (cont'd)	HKCA 1004, Issue 4 (2003); HKCA 1005, Issue 4 (2003); HKCA 1005, Issue 5 (2008); HKCA 1006, Issue 3 (2003); HKCA 1007, Issue 5 (2012); HKCA 1008, Issue 4 (2013); HKCA 1010, Issue 1 (2003); HKCA 1015, Issue 4 (2003); HKCA 1016, Issue 3 (2003); HKCA 1016, Issue 4 (2007); HKCA 1019, Issue 3 (2011); HKCA 1020, Issue 6 (2007); HKCA 1020, Issue 7 (2011); HKCA 1022, Issue 3 (2003); HKCA 1026, Issue 3 (2003); HKCA 1026, Issue 3 (2010); HKCA 1027, Issue 2 (2003); HKCA 1029, Issue 3 (2004); HKCA 1030, Issue 4 (2004); HKCA 1031, Issue 3 (2004); HKCA 1032, Issue 4 (2004); HKCA 1033, Issue 7 (2012); HKCA 1034, Issue 2 (2003); HKCA 1034, Issue 3 (2009); HKCA 1035, Issue 7 (2011); HKCA 1036, Issue 3 (2011); HKCA 1037, Issue 3 (2011); HKCA 1039, Issue 6 (2015); HKCA 1041, Issue 1 (2003); HKCA 1042, Issue 2 (2003); HKCA 1043, Issue 4 (2008); HKCA 1044, Issue 1 (2003); HKCA 1045, Issue 1 (2003); HKCA 1046, Issue 3 (2008); HKCA 1047, Issue 2 (2008); HKCA 1048, Issue 2 (2008); HKCA 1049, Issue 1 (2005); HKCA 1050, Issue 1 (2006); HKCA 1051, Issue 2 (2010); HKCA 1052, Issue 2 (2008); HKCA 1053, Issue 1 (2008); HKCA 1054, Issue 1 (2008); HKCA 1056, Issue 1 (2011); HKCA 1057, Issue 1 (2011); HKCA 1061, Issue 1 (2011); HKCA 1063, Issue 1 (2013); HKCA 1064, Issue 1 (2013); HKCA 1065, Issue 2 (2013); HKCA 1066, Issue 1 (2013); HKCA 1067, Issue 1 (2013); HKCA 1068, Issue 1 (2014); HKCA 1069, Issue 1 (2014); HKCA 1070, Issue 1 (2014); HKCA 1071, Issue 1 (2014); HKCA 1072, Issue 1 (2015); HKCA 1073, Issue 1 (2015); HKCA 1074, Issue 1 (2017); HKCA 1075, Issue 2 (2018); HKCA 1076, Issue 1 (2017); HKCA 1077, Issue 1 (2016); HKCA 1078, Issue 1 (2017); HKCA 1080, Issue 1 (2018) HKCA 1218, Issue 1 (1999); HKCA 1223, Issue 1 (1997); HKCA 1224, Issue 1 (1997); HKCA 1225, Issue 1 (1997); HKCA 1257, Issue 1 (1997); HKCA 1258, Issue 1 (1999); HKCA 1259, Issue 1 (1997); HKCA 1260, Issue 1 (1999); HKCA 1261, Issue 1 (1998); HKCA 1262, Issue 1 (1998); HKCA 1263, Issue 1 (1999); HKCA 1264, Issue 1 (1999); HKCA 1265, Issue 1 (1999); HKCA 1266, Issue 1 (1999); HKCA 1277, Issue 1 (1999); HKCA 1281, Issue 1 (1997); HKCA 1282, Issue 1 (1997); HKCA 1283, Issue 1 (2014); IMDA TS WBA (Oct. 2016); IMDA TS GMPCS (Oct. 2016); IMDA TS UWB (Oct. 2016); IMDA TS CT-CTS (Oct. 2016); IMDA TS SRD (Apr 2018); IMDA TS CMT (July 2017); IMDA TS CBS (July 2017); IMDA TS AR (Oct. 2016); IMDA TS LMR (Oct. 2016); IMDA TS WSD (Oct. 2016); IMDA TS IOT (Nov. 2017); IMDA TS DSRC (Oct. 2017);

Test Technology:	**Test Method(s)[3]:**
Radio Communications (cont'd)	KN 301 489-24 (2008-5); KN 301 489-1 (2008-5); KN 301 489-17 (2008-5); Korea MIC Rule No. 179; TCN 68-192 (2003); TCN 68-193 (2000); TCN 68-242 (2006); TCN 68-243 (2006); TCN 68-246 (2006); PLMN01 (2007, 2012); PLMN04 (2007); PLMN05 (2007); PLMN06 (2007); PLMN08 (2007, 2012); PLMN09 (2008, 2012); PLMN10; PLMN12 (2020); LP0001 (2003); LP0002 (2016); RSS-102; RSS-111; RSS-112; RSS-117; RSS-119; RSS-123; RSS-125; RSS-127; RSS-130; RSS-131; RSS-132; RSS-133; RSS-134; RSS-135; RSS-137; RSS-139; RSS-140; RSS-141; RSS-142; RSS-170; RSS-181; RSS-182; RSS-191; RSS-192; RSS-194; RSS-195; RSS-196; RSS-197; RSS-199; RSS-210; RSS-211; RSS-213; RSS-215; RSS-216; RSS-220; RSS-222; RSS-236; RSS-238; RSS-243; RSS-244; RSS-247; RSS-251; RSS-252; RSS-287; RSS-288; RSS-310; RSS-GEN; BETS-1, Issue 1 (1996-11)[4]; BETS-3, Issue 1 (1996-11)[4]; BETS-4, Issue 1 (1996-11)[4]; BETS-5, Issue 1 (1996-11)[4]; BETS-6, Issue 2 (2005-08)[4]; BETS-7, Issue 3 (2015-03)[4]; BETS-8, Issue 1 (1996-11)[4]; BETS-9, Issue 1 (1996-11)[4]; QCVN 10:2010/BTTTT; QCVN 11:2010/BTTTT; QCVN 12:2015/BTTTT; QCVN 13:2010/BTTTT; QCVN 15:2015/BTTTT; QCVN 17:2010/BTTTT; QCVN 18:2014/BTTTT; QCVN 37:2018/BTTTT; QCVN 39:2011/BTTTT; QCVN 42:2011/BTTTT; QCVN 43:2011/BTTTT; QCVN 44:2018/BTTTT; QCVN 47:2015/BTTTT; QCVN 54:2011/BTTTT; QCVN 55:2011/BTTTT; QCVN 65:2013/BTTTT; QCVN 66:2018/BTTTT; QCVN 73:2013/BTTTT; QCVN 74:2013/BTTTT; QCVN 75:2013/BTTTT; QCVN 76:2013/BTTTT; QCVN 86:2015/BTTTT; QCVN 95:2015/BTTTT; QCVN 96:2015/BTTTT; QCVN 99:2015/BTTTT; QCVN 103:2016/BTTTT; QCVN 111:2017/BTTTT; QCVN 112:2017/BTTTT; QCVN 117:2018/BTTTT; QCVN 118:2018/BTTTT; ANSI C63.26:2015; VNS-Voluntary National Specification 2030/8/3
FCC Radio Testing	47 CFR Parts 2, 11, 15, 18, 20, 22 (cellular), 24, 25, 27, 30, 73, 74, 80, 87, 90, 95, 96, 97, 101 (using ANSI C63.4:2014, ANSI C63.10:2013, ANSI C63.17:2013, ANSI C63.19:2011, ANSI C63.26:2015, IEEE STD 1528:2013, FCC KDB 905462 D02 (v02), ANSI/TIA-603E (2016), TIA-102.CAAA-E, FCC KDB 935210 D03 (v04), FCC KDB 935210 D04 (v02), and FCC KDB 935210 D05 (v01r01))

Test Technology:	**Test Method(s)[3]:**
SAR / RF Exposure / HAC	CNS 14958-1 (2005); CNS 14959; IEEE C95.1 (1999, 2005); IEEE 1528 (2013) and 1528a (2005); EN 50357 (2001); EN 50360:2017; EN 50361; EN 50385:2017; EN 50371 (2002); EN 50383 (2002); EN 60215 (1989); IEC 215 (1987+A1:1992+A2:1994); IEC 62209 (2001); EN 62209-1 (2006); IEC 62209-1 (2016); IEC 62209-2 (2010); EN 62233 (2008); IEC 62233 (2005); EN 62311 (2020); BS EN IEC 62311 (2020); BS EN 62479 (2010); H46-2/99-273E; BS EN 50566; OET Bulletin 65, Edition 97-01 (August 1997); Supplement C, Edition 01-01 to OET Bulletin 65, Edition 97-01; ANSI C63.19:2011; ISED Canada SPR-002
Telecommunications	HKCA 2001, Issue 12; HKCA 2011, Issue 6; HKCA 2012, Issue 3; HKCA 2013, Issue 4; HKCA 2014, Issue 5; HKCA 2015, Issue 5; HKCA 2016, Issue 5; HKCA 2017, Issue 4; HKCA 2018, Issue 4; HKCA 2019, Issue 2; HKCA 2020, Issue 3; HKCA 2021, Issue 2; HKCA 2022, Issue 2; HKCA 2023, Issue 4; HKCA 2024, Issue 3; HKCA 2026, Issue 3; HKCA 2026, Issue 4; HKCA 2027, Issue 3; HKCA 2028, Issue 2; HKCA 2028, Issue 3; HKCA 2029, Issue 3; HKCA 2029, Issue 4; HKCA 2030, Issue 2; HKCA 2030, Issue 3; HKCA 2031, Issue 2; HKCA 2031, Issue 3; HKCA 2032, Issue 3; HKCA 2032, Issue 1; HKCA 2033, Issue 2; HKCA 2034, Issue 2; HKCA 2035, Issue 3; HKCA 2036, Issue 4; HKCA 2037, Issue 2; HKCA 2038, Issue 2; HKCA 2039, Issue 2; HKCA 2201, Issue 5; HKCA 2202, Issue 4; ITU-T K.21 (07/2019); ITU-T K.20 (07/2019); ITU-T K.44 (10/2018); ITU-T K.45 (07/2018); ETSI EN 300 132-1 v2.2.1; ETSI EN 300 132-2 v2.4.6; ETSI EN 300 386-2 v1.1.3; ETSI EN 300 386 v1.6.1; ETSI EN 300 386 v2.1.1; CS-03, Part I, Issue 9, Amendment 5, March 2016; CS-03, Part II, Issue 9, Amendment 1, September 2012; CS-03, Part V, Issue 9, Amendment 2, January 2017; CS-03, Part VI, Issue 9, Amendment 1, September 2012; CS-03, Part VII, Issue 9, Amendment 4, September 2012; CS-03, Part VIII, Issue 9, Amendment 5, March 2016; JATE Blue Book (2003); JATE Green Book (2003); TCN 68-143; TCN 68-188; TCN 68-189; TCN 68-190; TCN 68-197; TCN 68-211; TCN 68-221; TCN 68-222; TCN 68-223; TCN 68-245; IS 2014-4 (1997); IS 2015-0 (1997); IS 2016-0 (1997); IS 2017-0 (1997); IS 2018-1 (1998); IS 2019-0 (1998); IS 2020-4 (1997); IS 2045-0 (2007); IS 2051 (2020); IS 6100 (2006, 2007); ID 0002 (2003); ID 0002 (2007); PSTN01 (2003, 2009);

Test Technology:	**Test Method(s)[3]:**
Telecommunications (cont'd)	IMDA TS DVB-T2 IRD Issue 1 Rev 1 (Nov 2017); IMDA TS CCHN Issue 1 (Oct 2016); IMDA TS PLC Issue 1 (Oct 2016); IMDA TS ADSL, Issue 2 (October 2016); IMDA TS ISDN, Issue 2 (October 2016); IMDA TS-PSTN, Issue 2 (2016); IMDA TS CM, Issue 2 (October 2016); IMDA TS DLCN, Issue 1 (October 2016); FCC/ACTA Method - 47 CFR Part 68 - Analog and Digital: 68.316 and 68.317 Hearing Aid Compatibility; T1.TRQ.6 (2001); ANSI/SCTE 81 2012; ANSI/TIA-968-B-1 (2012-08); ANSI/TIA-968-B-2 (2015-03); ANSI/TIA-968-B-3 (2016-07); ANSI/TIA-1096-A (2008); ANSI/TIA-968-B (2009-08, 2010-04); TIA/EIA TSB-31-B (1998); AS/CA S002 (2011); AS/CA S003.1 (2010); AS/CA S003.2 (2010); AS/CA S003.3 (2010); AS/ACIF S004 (2008); AS/ACIF S006 (2008); AS/CA S008 (2011); AS/ACIF S016 (2001); AS/ACIF S041 (2005) (*excluding sec. 5.3*); AS/ACIF S041.1 (2009); AS/ACIF S042.1 (2011); AS/ACIF S042.3 (2005); AS/CA S042.4 (2018); AS/ACIF S043.1 (2003); AS/ACIF S043.2 (2006, 2008); AS/ACIF S043.3 (2003, 2008); QCVN 19:2010/BTTTT; PSTN - Ministry of Communications Specification 023/96: Specification of Terminal Equipment Interconnected to the Analog Public Telephone Network - Requirements for Type Approval RTTE01 (2007)

ENERGY STAR Testing

Product Family:	**Supporting Standards/Methods:**
Computers	ENERGY STAR Program Requirements Product Specification for Computers, Version 7.1
Displays (*excluding enhanced performance and full network connectivity*)	ENERGY STAR Program Requirements for Displays, Version 8.0; ENERGY STAR Test Method for Determining Displays Energy Use, (Rev. Sep-2015)
Electric Vehicle Supply Equipment (*excluding Electric Vehicle Supply Equipment with Display)*	ENERGY STAR Program Requirements Product Specification for Electric Vehicle Supply Equipment, Version 1.0; ENERGY STAR Electric Vehicle Supply Equipment Test Method (Rev. Apr-2017); ENERGY STAR Test Method for Determining Displays Energy Use, (Rev. Sep-2015) Section 6.7.5.2 of Consumer Electronics Association (CEA) 2037 A
Enterprise Servers	ENERGY STAR Program Specification for Computer Servers, Version 3.0; ENERGY STAR Test Method for Computer Servers, (Rev. September 2018); Standard Performance Evaluation Corporation (SPEC) Server Efficiency Rating Tool (SERT), Version 2.0.2 (March 2019)
Imaging Equipment	ENERGY STAR Program Specification for Imaging Equipment, Version 3.0; ENERGY STAR Imaging Equipment Test Method (December 2018)
Lighting Products	ENERGY STAR Program Requirements for Luminaires, Version 2.2; ENERGY STAR Program Requirements for Lamps (Version 2.1); ENERGY STAR Test Method for Lamps and Luminaries – Start Time (October 2017); ENERGY STAR Test Method for Lamps and Luminaries – Run-up Time (September 2015); ENERGY STAR Test Method for Lamps and Luminaries – Noise (September 2015); ENERGY STAR Elevated Temperature Light Output Ratio Test Method (September 2015); ENERGY STAR Ambient Temperature Life Testing Test Method (September 2015); ENERGY STAR Elevated Temperature Life Testing Test Method (September 2015) ENERGY STAR Method of Measurement for Light Source Flicker

Product Family:	**Supporting Standards/Methods:**
Measurement of Standby Power and Power Consumption	IEC 62301 Edition 2.0 2011-01; BS EN 50564 (2011); IEC 62623 (2012)
Televisions	ENERGY STAR Program Requirements for Televisions, Version 8.0; 10 CFR Part 430, Subpart B, Appendix H; CEA-2037-A; CEA Procedure for DAM Testing: For TV's, Rev 0.3, September 2010

Lighting Testing

Tests are performed on Florescent, Compact Florescent, Solid State, High-Intensity Discharge (HID), Light-Emitting Diode (LED), and Incandescent (filament-based) lighting products.[2]

Test Technology:	**Test Method(s)[3]:**
Color Measurements	IES LM-16 (1993); IES LM-79 (2008) Section 12; IES LM-79 (2019) Section 9; IES LM-58 (2013); CIE Pub. 13.3 (1995); CIE Pub. 15 (2004)
Electrical Measurements	IES LM-9 (1988, 1999, 2009); IES LM-45-15; IES LM-66 (1991, 2000, 2011, 2014); ANSI C78.375 (1997); ANSI C78.375A; ANSI C82.2 (2002, R2016); ANSI C82.77 (2014)
Life Testing / Maintenance	IES LM-40 (2010); IES LM-49 (2001, 2012); IES LM-65 (1991, 2001, 2010, 2014); IES LM-80 (2008, 2015); IES LM-84 (2014); IES LM-85 (2014)
Luminous Intensity Distribution	IES LM-79 (2008) Section 10; IES LM-79 (2019) Section 8
Photometric Measurements	IES LM-9 (1988, 1999, 2009); IES LM-20-13; IES LM-45-15; IES LM-66 (2000, 2011, 2014); IES LM-79 (2008) Section 9; IES LM 79 (2019) Section 7; EN/IEC 60969:2016; LM-82-12; LM-41-14

[1] A2LA provides accreditation to the U.S. EPA's Conditions and Criteria for Recognition of Laboratories for the ENERGY STAR Program by verifying an organization's compliance to A2LA document *R222 - Specific Requirements - EPA ENERGY STAR Accreditation Program* and to the related test methods listed above.

Accreditation by A2LA does not infer Recognition by the EPA for ENERGY STAR testing. Please verify this organization's recognition status by using the EPA's searchable databases listed below:

Recognized Testing / Certifying Organizations (does not include Lighting):
http://www.energystar.gov/index.cfm?fuseaction=recognized_bodies_list.show_RCB_search_form

Recognized Lighting Testing / Certifying Organizations:
http://www.energystar.gov/cms/default/index.cfm/news-and-announcements/hidden-articles/epa-recognized-bodies-for-lighting-products/epa-recognized-bodies-for-lighting-products

[2] The EPA ENERGY STAR program does not recognize incandescent lighting products; however, this laboratory is accredited to perform these tests for its commercial customers.

[3] When the date, revision or edition of a test method standard is not identified on the scope of accreditation, the laboratory is expected to be using the current version within one year of the date of publication, per part C., Section 1 of A2LA *R101 - General Requirements - Accreditation of ISO-IEC 17025 Laboratories*.

[4] This laboratory also meets A2LA *R104 – General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these tests or calibrations.

Testing Activities Performed in Support of FCC Certification approval procedures in accordance with 47 Code of Federal Regulations and FCC KDB Publication 974614, Appendix A Table A.1 [5]:		
Rule Subpart/Technology	**Test Method**	**Maximum Frequency (MHz)**
Unintentional Radiators		
Part 15B	ANSI C63.4:2014	40000
Industrial, Scientific, and Medical Equipment		
Part 18	FCC MP-5 (February 1986)	325000
Intentional Radiators		
Part 15C	ANSI C63.10:2013	200000
Unlicensed Personal Communication Systems Devices		
Part 15D	ANSI C63.17:2013	200000
U-NIII without DFS Intentional Radiators		
Part 15E	ANSI C63.10:2013	200000
U-NIII with DFS Intentional Radiators		
Part 15E	FCC KDB 905462 D02 (v02)	200000

Testing Activities Performed in Support of FCC Certification approval procedures in accordance with 47 Code of Federal Regulations and FCC KDB Publication 974614, Appendix A Table A.1 [5]:		
Rule Subpart/Technology	**Test Method**	**Maximum Frequency (MHz)**
UWB Intentional Radiators		
Part 15F	ANSI C63.10:2013	200000
BPL Intentional Radiators		
Part 15G	ANSI C63.10:2013	40000
White Space Device Intentional Radiators		
Part 15H	ANSI C63.10:2013	200000
Commercial Mobile Services (FCC Licensed Radio Service Equipment)		
Parts 22 (cellular), 24, 25 (Below 3 GHz), and 27	ANSI/TIA-603-E; ANSI C63.26:2015	200000
General Mobile Radio Services (FCC Licensed Radio Service Equipment)		
Parts 22 (non-cellular), 90 (Below 3 GHz), 95, 97 (Below 3 GHz), and 101 (Below 3 GHz)	ANSI/TIA-603-E; ANSI C63.26:2015	200000
Citizens Broadband Radio Services (FCC Licensed Radio Service Equipment)		
Part 96	ANSI/TIA-603-E; ANSI C63.26:2015	200000
Maritime and Aviation Radio Services (FCC Licensed Radio Service Equipment)		
Parts 80 and 87	ANSI/TIA-603-E; ANSI C63.26:2015	200000
Microwave and Millimeter Bands Radio Services (FCC Licensed Radio Service Equipment)		
Parts 25, 30, 74, 90 (M, DSRC, Y, Z), 95 (M, L), and 101	ANSI/TIA-603-E; ANSI C63.26:2015	200000
Broadcast Radio Services (FCC Licensed Radio Service Equipment)		
Parts 73 and 74 (Below 3 GHz)	ANSI/TIA-603-E; ANSI C63.26:2015	200000
RF Exposure		
Devices Subject to SAR Requirements	IEEE Std 1528:2013	6000
Hearing Aid Compatibility		
Part 20 (HAC for Commercial Mobile Services)	ANSI C63.19:2011	6000

Testing Activities Performed in Support of FCC Certification approval procedures in accordance with 47 Code of Federal Regulations and FCC KDB Publication 974614, Appendix A Table A.1 [5]:		
Rule Subpart/Technology	**Test Method**	**Maximum Frequency (MHz)**
Signal Boosters (Part 20)		
Wideband Consumer Signal Boosters Provider-specific Signal Boosters Industrial Signal Boosters Signal Boosters (Section 90.219)	ANSI C63.26:2015	200000

[5]Accreditation does not imply acceptance to the FCC equipment authorization program. Please see the FCC website (https://apps.fcc.gov/oetcf/eas/) for a listing of FCC approved laboratories.

Accredited Laboratory

A2LA has accredited

BAY AREA COMPLIANCE LABORATORIES CORP.

Sunnyvale, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets A2LA *R222 - Specific Requirements EPA ENERGY STAR Accreditation Program*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 2nd day of October 2018.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3297.02
Valid to November 30, 2020
Revised August 31, 2020

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.