



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

ITC Engineering Services, Inc.
9959 Calaveras Road, Sunol, CA 94586

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

Electrical Testing
(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President

<i>Initial Accreditation Date:</i>	<i>Issue Date:</i>	<i>Expiration Date:</i>
January 17, 2020	November 12, 2020	February 28, 2022

<i>Accreditation No.:</i>	<i>Certificate No.:</i>
93332	L20-689

Perry Johnson Laboratory
Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjilabs.com



Certificate of Accreditation: Supplement

ITC Engineering Services, Inc.

9959 Calaveras Road, Sunol, CA 94586

Contact Name: Michael Gbadebo, PE, Phone: 925-862-2944

Accreditation is granted to the facility to perform the following testing:

FIELD OF TEST	SUBFIELD OF TESTING	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED
Electrical ^F	EMC- Emissions	Radiated and Conducted	CISPR 25:2016; ISO 13766:2006; EN 13309:2010; ISO 11452-1:2015; ISO 11452-2:2004; ICES-001: Issue 4: June 2006; ICES-003 Issue 6: June 2016; CISPR 11: 2015; EN 55011:2016; KN 11; AS/NZS CISPR 11:2011; KN 301 489-1 V1.5.1:2004 KN 301 489-17:2015 (Annex 8-13) CNS 13803:2003; CISPR 15: 2015; EN 55015: 2015; MIL-STD-461F, MIL-STD-462D, MIL- STD-461G
	EMC- Emissions	Radiated and Conducted	CISPR 22: 2008; EN 55022:2010; CISPR 32:2015; EN 55032:2015; KN 32 AS/NZS CISPR 22:2010; VCCI V-3 (up to 6 GHz): 2016-04; VCCI V-5 2016, CNS 13438 (up to 6 GHz):2006
	Low Frequency	Harmonics Voltage Fluctuations/Flicker	IEC 61000-3-2: 2014; AS/NZ 61000-3-2:2013; EN 61000-3-2: 2014 (Annex 1-2); KN 61000-3-3:2015; AS/NZS 61000-3-2: 2013; AS/NZ 61000-3-3:2012, IEC 61000-3-3:2013; EN 61000-3-3:2013; IEC 61000-3-11:2000; EN 61000-3-11:2001
	EMC -Immunity	Electrostatic Discharge (ESD) Radiated Immunity Electrical Fast Transients/Burst (EFT) Surge Immunity Conducted Immunity Magnetic Field Immunity Voltage Dips	CSPR 24:2010; EN55024:2010 AS/NZ CISPR 24:2013; IEC 61000-6-1:2016; IEC 61000-6-2:2016, IEC 61326-1:2012 IEC 61000-4-2: 2008; EN 61000-4-2:2009; KN 61000-4-2:2015; ISO 10605:2008; IEC 61000-4-3:2010; EN 61000-4-3:2010; KN 61000-4-3:2015, IEC 61000-4-6:2013-10; EN 61000-4-6:2014; KN 61000-4-6:2015 MIL-STD-461F, MIL-STD-462D, MIL-STD- 461G; DNVGL-CG-0339:2015; MIL-STD 1275D; MIL-STD. 1275E, IEC 61000-4-4:2012; EN 61000-4-4:2012; KN 61000-4-4:2015; IEC 61000-4-5:2014; EN 61000-4-5:2014; KN 61000- 4-5:2015; IEC 61000-4-8: 2009; EN 61000-4- 8:2010; KN 61000-4-8:2015; IEC 61000-4- 11:2004; EN 61000-4-11:2004; KN 61000-4- 11:2015; BS EN 50498:2010; ANSI C63.27:2017; ANSI/ASA 53.22:2014



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Electrical ^F	EMC	Product Family and Generic Standards	IEC 61000-6-1:2016; EN 61000-6-1:2007; IEC 61000-6-2:2016; EN 61000-6-2:2005; IEC 61000-6-3:2010; EN 61000-6-3:2011; IEC 61000-6-4:2010; EN 61000-6-4:2011; IEC 61326-1:2012; EN 61326-1:2013; IEC 60601-1-2:2014; EN 60601-1-2:2015; IEC 60601-1-2 2.1 Ed. :2004; IEC 60601-1-2:2001/AMD1 Ed. :2004; IEC 60601-1-2 Ed. 2007 CISPR 24:2015; EN 55024:2015; IEC 61326-1:2012; EN 61326-1:2013; EN 60601-1-2:2015
	Product Safety Insulation	Resistance, Leakage Current, Temperature, Humidity, Impact, Acoustic, Abnormal, Tilt, Construction Review, Force Gauge, Articulate Finger, Hot Wire Ignition Dielectric Withstand Test (Hipot) and Testing of Automatic Gas Burner Control Systems Intrinsic Safety Test, Acoustic Test	UL 60950-1:2007; IEC 60950-1 (excluding clause 4.3.13.2):2013; EN 60950-1:2013; AS/NZS 60950:2015; IEC 62368-1:2018 IEC 61010-1:2010/AMD1:2016 (excluding clauses 12.2.1 and 13.3); EN 61010-1 (excluding clauses 12.2.1 and 13.3:2010); IEC 60601-1:2012 (excluding clauses 9.7.5 and 10.1); IEC 60601-1 Ed. :1988; Amendment 1 Ed. :1991 Amendment 2 Ed. :1995; IEC 60601-1-3:2008/AMD 1:2013; EN 60601-1-3: 2008/AMD 11:2016; IEC 60601-1 3.0 Ed. :2005; IEC 60601-1 3.1 Ed. :2012; IEC 60601-1-6:2010; IEC 60601-1-8 IEC 60601-2-22:2012; EN 60601-2-22:2013; IEC 60601-2-37:2007+A1:2015; IEC 60601-2-2:2017; IEC 60601-2-18:2009 IEC 60601-2-10:2012/AMD1:2016 EN 60601-2-37:2007+A1:2015; IEC 60601-2-10:2016, IEC 60601-2-57:2011 IEC 60601-2-47, IEC 60204-1:2016; EN 60204-1: 2006+A1:2009; IEC 60529:2013; BS EN 60529:1992+A2:2013; IEC 60825-1:2014; EN 60825-1:2014; MIL-STD-202G, Method 301; EN 298:2012; EN 230:2005; EN 60730-1:2016 EN 62061:2015, IEC 60079-0:2017 IEC 60079-15:2017; IEC 62133-2:2017; IEC 62368-1:2018; IEC 62366-1:2015; IEC 62304:2015; IEC 60068-2-38:2009; IEC IEC 60601-1-12:2014 ISO 62471:2006/EN62471:2008; ISO 80601-2-56:2017; ECMA 74:2008; IEC 62133-2:2017; IEC 61326-2012 IEC 62109:2010; IEC 60086-1:2015 IEC 60664-1:2007



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Electrical ^F	EMC	Automotive	ISO 7637 - 2:2011; ISO 16750-3:2007; ISO 16750-4:2010; EN 50436-01:2015; EN 50436-02:2015; EN 50436-6:2015; ISO 11452-1:2015; ISO 13766-1:2018; ISO 13766-2:2018, CISPR 25:2016 [Docket No. NHTSA-2013-0058] Model Specifications for Breath Alcohol Ignition Interlock Devices: Canada CSTT-HVC-TR-150:2008
	Environmental Simulation	Environmental Simulation	MIL-STD-810F; MIL-STD-810G; IEC 60529:2015 IEC 60601-1-11 2015; ISO 15004:2009; ISO 9022-2:2015; ISO 9022-3:2015; IEC 60068-2-380:2009; IEC 62052-31:2015; IEC 61760-2:2007; ISO 5439-1:2001
	Electromagnetic Compatibility	Republic of Korea Regulations Technical Requirements for Electromagnetic Compatibility Test Methods for Electromagnetic Compatibility Conformity Assessment Procedure of Radio Equipment Regulations on Radio Equipment	RRA Public Notification 2016-26, December 19, 2016, RRA Announce 2016-79, December 19, 2016 (Annexes 2, 5, 8-3, 8-1, 9) (Annexes 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7) MSIP Public Notification 2017-21, Mar 31, 2017 Enforcement Decree MSIP No. 1, July 26, 2017
	Radio / RED	Radio / RED / SAR	EN 300 220-1 V3.1.1 (2017-02); EN 300 220-2 V3.1.1 (2017-02); EN 300 328 V2.1.1 (2016-12); EN 300 440-1 V1.4.1 (2008-03); EN 300 440-2 V1.4.1 (2010-08); EN 300 386 V2.1.1 (2016-07); EN 301 893 V2.1.1 (2017-06) (Including DFS); EN 301 511 V12.5.1 (2017-03); EN 301 489-1 V2.1.1 (2017-02); RSS 135 Issue 2, June 2009; RSS 210 Issue 9, August 2016; RSS 247 (with DFS) Issue Date: 2 FEB 2017; RSS 132 Issue 3 January 2013; RSS 133 Issue 6 January 2018; RSS 215 Issue 2, June 2009; RSS 310 Issue 4 July 2015; RSS-Gen Issue 5 April 2018; KN 301 489-1: Dec 2017; KN 301 489-17: June 2013 (Annex 8-13) AS/NZS 4268: 2017; IEC 62209-1:2016; IEC 62209-2:2019; IEC/TR 62630:2010; IEEE 1528:2013, NIJ-1004.00



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Electrical ^F	Radio / RED	UWB Intentional Radiators (FCC Part 15, Subpart F) Ultra-wideband Operation	ANSI C63.10-2013
		Unintentional Radiators (FCC Part 15, Subpart B)	ANSI C63.4-2014
		Industrial, Scientific, and Medical Equipment (FCC Part 18) Consumer ISM equipment	FCC MP-5, (February 1986)
		Intentional Radiators (FCC Part 15, Subpart C)	ANSI C63.10-2013
		U-NII without DFS Intentional Radiators (FCC Part 15, Subpart E) Unlicensed National Information Infrastructure Devices (U-NII without DFS)	ANSI C63.10-2013
		BPL Intentional Radiators (FCC Part 15, Subpart G) Access Broadband Over Power Line (Access BPL)	ANSI C63.10-2013
		U-NII with DFS Intentional Radiators (FCC Part 15, Subpart E) Unlicensed National Information Infrastructure U-NII) Devices with Dynamic Frequency Selection (DFS)	FCC KDB Publication 905462 D02 UNII DFS Compliance Procedures New Rules v02 (April 8, 2016)
Electrical ^F EMC Emissions		Radiated and Conducted	CISPR 25:2016; ISO 13766:2006; EN 13309:2010; ISO 11452-1:2015; ISO 11452-2:2004; ICES-001: Issue 4: June 2006; ICES-003 Issue 6: June 2016; CISPR 11: 2015; EN 55011:2016; KN 11; AS/NZS CISPR 11:2011; KN 301 489-1 V1.5.1:2004 KN 301 489-17:2015 (Annex 8-13) CNS 13803:2003; CISPR 15: 2015; EN 55015: 2015; MIL-STD-461F, MIL-STD-462D, MIL-STD-461G CISPR 22: 2008; EN 55022:2010; CISPR 32:2015; EN 55032:2015; KN 32 AS/NZS CISPR 22:2010; VCCI V-3 (up to 6 GHz): 2016-04; VCCI V-5 2016, CNS 13438 (up to 6 GHz):2006



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Electrical ^F Low Frequency	Radio / RED	Harmonics Voltage Fluctuations/Flicker	IEC 61000-3-2: 2014; AS/NZ 61000-3-2:2013; EN 61000-3-2: 2014 (Annex 1-2); KN 61000-3-3:2015; AS/NZS 61000-3-2: 2013; AS/NZ 61000-3-3:2012, IEC 61000-3-3:2013; EN 61000-3-3:2013; IEC 61000-3-11:2000; EN 61000-3-11:2001
Electrical ^F EMC Immunity		Electrostatic Discharge (ESD) Radiated Immunity Electrical Fast Transients/Burst (EFT) Surge Immunity Conducted Immunity Magnetic Field Immunity Voltage Dips	CISPR 24:2010; EN55024:2010 AS/NZ CISPR 24:2013; IEC 61000-6-1:2016; IEC 61000-6-2:2016, IEC 61326-1:2012 IEC 61000-4-2: 2008; EN 61000-4-2:2009; KN 61000-4-2:2015; ISO 10605:2008; IEC 61000-4-3:2010; EN 61000-4-3:2010; KN 61000-4-3:2015, IEC 61000-4-6:2013-10; EN 61000-4-6:2014; KN 61000-4-6:2015 MIL-STD-461F, MIL-STD-462D, MIL-STD-461G; DNVGL-CG-0339:2015; MIL-STD 1275D; MILSTD. 1275E, IEC 61000-4-4:2012; EN 61000-4-4:2012; KN 61000-4-4:2015; IEC 61000-4-5:2014; EN 61000-4-5:2014; KN 61000-4-5:2015; IEC 61000-4-8: 2009; EN 61000-4-8:2010; KN 61000-4-8:2015; IEC 61000-4-11:2004; EN 61000-4-11:2004; KN 61000-4-11:2015; BS EN 50498:2010
Electrical ^F EMC		Product Family and Generic Standards	IEC 61000-6-1:2016; EN 61000-6-1:2007; IEC 61000-6-2:2016; EN 61000-6-2:2005; IEC 61000-6-3:2010; EN 61000-6-3:2011; IEC 61000-6-4:2010; EN 61000-6-4:2011; IEC 61326-1:2012; EN 61326-1:2013; IEC 60601-1-2:2014; EN 60601-1-2:2015; IEC 60601-1-2 2.1 Ed. :2004; IEC 60601-1-2:2001/AMD1 Ed. :2004; IEC 60601-1-2 Ed. 2007 CISPR 24:2015; EN 55024:2015; IEC 61326-1:2012; EN 61326-1:2013; EN 60601-1-2:2015
	Automotive	ISO 7637 - 2:2011; ISO 16750-3:2007; EN 50436-01:2015; EN 50436-02:2015; ISO 11452-1:2015; ISO 13766-1:2018; ISO 13766-2:2018, CISPR 25:2016 [Docket No. NHTSA-2013-0058] Model Specifications for Breath Alcohol Ignition Interlock Devices: Canada CSTT-HVC-TR-150:2008	



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Electrical ^F Product Safety Insulation	Radio / RED	Resistance, Leakage Current, Temperature, Humidity, Impact, Acoustic, Abnormal, Tilt, Construction Review, Force Gauge, Articulate Finger, Hot Wire Ignition Dielectric Withstand Test (Hipot) and Testing of Automatic Gas Burner Control Systems Intrinsic Safety Test, Acoustic Test	UL 60950-1:2007; IEC 60950-1 (excluding clause 4.3.13.2):2013; EN 60950-1:2013; AS/NZS 60950:2015; IEC 61010-1:2010/AMD1:2016 (excluding clauses 12.2.1 and 13.3); EN 61010-1 (excluding clauses 12.2.1 and 13.3:2010; IEC 60601-1:2012 (excluding clauses 9.7.5 and 10.1); IEC 60601-1 Ed. :1988; Amendment 1 Ed. :1991 Amendment 2 Ed. :1995; IEC 60601-1-3:2008/AMD 1:2013; EN 60601-1-3: 2008/AMD 11:2016; IEC 60601-1 3.0 Ed. :2005; IEC 60601-1 3.1 Ed. :2012; IEC 60601-1-6:2010; IEC 60601-1-8 IEC 60601-2-22:2012; EN 60601-2-22:2013; IEC 60601-2-37:2007+A1:2015; IEC 60601-2-2:2017; IEC 60601-2-18:2009 IEC 60601-2-10:2012/AMD1:2016 EN 60601-2-37:2007+A1:2015; IEC 60601-2-10:2016, IEC 60601-2-57:2011 IEC 60601-2-47, IEC 60204-1:2016; EN 60204-1: 2006+A1:2009; IEC 60529:2013; BS EN 60529:1992+A2:2013; IEC 60825-1:2014; EN 60825-1:2014; MIL-STD-202G, Method 301; EN 298:2012; EN 230:2005; EN 60730-1:2016 EN 62061:2015, IEC 60079-0:2017 IEC 60079-15:2017; IEC 62133-2:2017; IEC 62368- 1:2018; IEC 62366-1:2015; IEC 62304:2015; IEC 60068-2-38:2009; IEC IEC 60601-1-12:2014 ISO 62471:2006/EN62471:2008; ISO 80601-2-56:2017; ECMA 74:2008; IEC 62133- 2:2017; IEC 61326-2012 IEC 62109:2010; IEC 60086-1:2015; IEC 60664- 1:2007
Electrical ^F Fixed Microwave Services		Microwaves	FCC CFR Title 47 Part 101, KDB Publication 935210

1. The presence of a superscript F means that the laboratory performs testing of the indicated parameter at its fixed location.