



SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 1

Total Sheets: 62

REGISTERED NAME/ LABORATORY NAME

NATIONAL INSTITUTE FOR SPACE RESEARCH – INPE
EMI, EMC, ANTENNA AND TELECOMMUNICATION TEST LABORATORY

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>AUTOMOTIVE AND OTHER EQUIPMENT'S TRANSPORTATION</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
LIGHT AND HEAVY AUTOMOTORS VEHICLES	Radiated Disturbance Emission	CISPR 25 Ed. 4.0: 2016 CISPR 25 Ed. 3.0: 2008 ABNT NBR IEC CISPR 25Ed.1.0: 2010 CISPR 12 Ed.6.1:2007+A1:2009 ABNT NBR IEC CISPR12 Ed.2.0: 2012 SAE J551/1: 2015 SAE J551/5: 2012 UNECE Regulation 10 Rev. 5 2014 Directive 72/245/EEC: 2009
	Immunity to Radiated Disturbances (External Sources)	ISO 11451-1 Ed.4.0: 2015 ABNT NBR ISO 11451-1 Ed.3.0: 2016 ABNT NBR ISO 11451-1 Ed.2.0: 2014 ISO 11451-2 Ed.4.0: 2015 ABNT NBR ISO 11451-2 Ed.1.0: 2006 SAE J551/1: 2015 SAE J551/11: 2010 UNECE Regulation 10 Rev. 5: 2014 Directive 72/245/EEC: 2009
	Immunity to Radiated Disturbances (Internal Sources)	ISO 11451-1 Ed.4.0: 2015 ABNT NBR ISO 11451-1 Ed.3.0: 2016 ABNT NBR ISO 11451-1 Ed.2.0: 2014 ISO 11451-3 Ed.3.0: 2015 ABNT NBR ISO 11451-3 Ed.1.0: 2006 SAE J551/1: 2015 SAE J551/12: 2009

"This Scope cancel and replace the previously revision issued"

At 27 /10 / 2020

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 2

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>AUTOMOTIVE AND OTHER EQUIPMENT'S TRANSPORTATION</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
LIGHT AND HEAVY AUTOMOTORS VEHICLES (Cont.)	Immunity to Electrostatic Discharge (ESD)	ISO 10605 Ed.2.0:2008 +A1: 2014 SAE J551/1:2015 SAE J551/15: 2015 SAE J551/15: 2009
	Immunity to Conducted Disturbances (BCI)	ISO 11451-1 Ed.4.0: 2015 ABNT NBR ISO 11451-1 Ed.3.0: 2016 ABNT NBR ISO 11451-1 Ed.2.0: 2014 ISO 11451-4 Ed.3.0: 2013 ABNT NBR ISO 11451-4 Ed.1.0: 2011 SAE J551/1: 2015 SAE J551/13:2003 UNECE Regulation 10 - Rev. 5: 2014 Directive 72/245/EEC: 2009
AUTOMOTIVE COMPONENTS	Radiated and Conducted Disturbance Emission	CISPR 25 Ed. 4.0: 2016 CISPR 25 Ed. 3.0: 2008 ABNT NBR IEC CISPR 25 Ed.1.0: 2010 SAE J1113/1: 2013 SAE J1113/41: 2006 UNECE Regulation 10 - Rev. 5: 2014 Directive 72/245/EEC: 2009
	Conducted Electrical Transient Emssion	ISO 7637-1 Ed.3.0: 2015 ISO 7637-1 Ed.2.0: 2002 ISO 7637-2 Ed.3.0: 2011 SAE J1113/1: 2013 UNECE Regulation 10 - Rev. 5: 2014 Directive 72/245/EEC: 2009
	Immunity to Radiated Disturbances (Antenna)	ISO 11452-1 Ed.4.0: 2015 ABNT NBR ISO 11452-1 Ed.2.0:2011 ISO 11452-2 Ed.2.0: 2004 ABNT NBR ISO 11452-2Ed.1.0:2006 SAE J1113/1: 2013 UNECE Regulation 10 Rev. 5: 2014 Directive 72/245/EEC: 2009

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 3

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>AUTOMOTIVE AND OTHER TRANSPORT EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
AUTOMOTIVE COMPONENTS (Cont.)	Immunity to Radiated Disturbances (TEM Cell)	ISO 11452-1 Ed.4.0: 2015 ABNT NBR ISO 11452-1 Ed.2.0:2011 ISO 11452-3 Ed. 3.0: 2016 ISO 11452-3: 2001 SAE J1113/1: 2013 SAE J1113/24: 2010 UNECE Regulation 10 Rev. 5: 2014 Directive 72/245/EEC: 2009
	Immunity to Conducted Disturbances (BCI)	ISO 11452-1 Ed.4.0: 2015 ABNT NBR ISO 11452-1 Ed.2.0:2011 ISO 11452-4 Ed.4.0: 2011 SAE J1113/1: 2013 SAE J1113/4: 2014 UNECE Regulation 10 Rev. 5: 2014 Directive 72/245/EEC: 2009
	Immunity to Conducted and Coupled Transients	ISO 7637-1 Ed.3.0: 2015 ISO 7637-1 Ed.2.0: 2002 ISO 7637-2 Ed.3.0: 2011 ISO 7637-3 Ed.3.0: 2016 ISO 7637-3 Ed.2.0: 2007 ISO 16750-2 Ed 4.0: 2012 ISO 21848 Ed.1.0: 2005 SAE J1113/1: 2013 SAE J1113/11: 2012 SAE J1113/12: 2006 UNECE Regulation 10 Rev. 5: 2014 Directive 72/245/EEC: 2009
	Immunity to Electrostatic Discharge (ESD)	ISO 10605 Ed.2.0:2008+A1:2014 SAE J1113/1: 2013 SAE J1113/13: 2015
	Immunity to Magnetic Fields	ISO 11452-1 Ed.4.0: 2015 ABNT NBR ISO 11452-1 Ed.2.0:2011 ISO 11452-8 Ed.2.0: 2015 SAE J1113/1: 2013
	Resistance to Electrical Disturbances	ISO 16750-1 Ed.2.0: 2006 ISO 16750-2 Ed.4.0: 2012
	Immunity to Conducted Disturbances - Direct RF Power Injection	ISO 11452-1 Ed.4.0: 2015; ISO 11452-7 Ed.2.0: 2003 + A1: 2013.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 4

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>AUTOMOTIVE AND OTHER TRANSPORT EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
AUTOMOTIVE COMPONENTS (Cont.)	Immunity to Radiated Disturbances - Portable Transmitters	ISO 11452-1 Ed.4.0: 2015; ISO 11452-9 Ed.1.0: 2012.
	Immunity to Conducted Disturbances - Audio Frequency	ISO 11452-1 Ed.4.0: 2015; ISO 11452-10 Ed.1.0: 2009.
ELECTRIC FUEL PUMP FOR OTTO CYCLE ENGINE	Radiated and Conducted Disturbance Emission	CISPR 25 ed. 4.0: 2016 CISPR 25 ed. 3.0: 2008 ABNT NBR IEC CISPR 25 Ed.1.0: 2010 ABNT NBR 15754 Ed.1.0: 2009 INMETRO ordinance nº 301: 2011, Specific Annex II
<u>ELECTRIC HOUSEHOLD APPLIANCES AND SIMILAR</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
ELECTRIC AND ELECTRONICS HOUSEHOLD APPLIANCES, SEGMENTS IN GENERAL	Emission of Conducted and Radiated Electromagnetic Disturbances	CISPR 11 Ed.5.0:2009 +A1:2010; CISPR11 Ed.4.0:2003 + A1:2004 + A2:2006; CISPR 14-1 Ed.5.2:2005 + A1:2008 + A.2:2011; CISPR 22 Ed.6.0: 2008; CISPR 22 Ed.5.0:2005 + A1:2005 + A2:2006. CISPR 32 Ed. 2.0 (2015)
	Harmonic Measurement	IEC 61000-3-2 Ed.3.2:2005 + A1:2008 + A2:2009.
	Voltage Flutuactions and Flicker Measurement	IEC 61000-3-3 Ed.3.0: 2013 +A1:2017 IEC 61000-3-3 Ed.2.0:2008
	Harmonic and Interharmonic Immunity	IEC 60335-1 Ed. 5.0:2010 + A1:2013+A2:2016 Subclause 19.11.4.7 NBR NM 60335-1: 2010 Subclause 19.11.4.7 IEC 61000-4-13 Ed. 1.1: 2002 + A1: 2009 + A2:2015

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 5

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>ELECTRIC HOUSEHOLD APPLIANCES AND SIMILAR</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
ELECTRIC AND ELECTRONICS HOUSEHOLD APPLIANCES, SEGMENTS IN GENERAL (Cont.)	Immunity to Electrostatic Discharges	CISPR 14-2 Ed.1.2:1997 + A1:2001 + A2:2008; IEC 60335-1 Ed.5.0:2010 + A1:2013 +A2: 2016 Subclause 19.11.4.1. NBR NM 60335-1 Ed.2.0:2010; Subclause 19.11.4.1. IEC 61000-4-2 Ed.2.0:2008; IEC 61000-4-2: E.1.0:1995 + A1:1998 + A2:2000.
	Immunity to Radiated Radio Frequency Disturbances	CISPR 14-2 Ed.1.2:1997 + A1:2001 + A2:2008; IEC 60335-1 Ed.5.0:2010 + A1:2013 + A2: 2016 Subclause 19.11.4.2. NBR NM 60335-1 Ed.2.0:2010; Subclause 19.11.4.2. IEC 61000-4-3 Ed.3.0:2006/2008 + A2:2010; IEC 61000-4-3 Ed.2.0:2002.
	Immunity to Electrical Fast Transients	CISPR 14-2 Ed.1.2:1997 + A1:2001 + A2:2008; IEC 60335-1 Ed.5.1:2010 + A1:2013; Subclause 19.11.4.3. NBR NM 60335-1 Ed.2.0:2010; Subclause 19.11.4.3. IEC 61000-4-4 Ed.3.0:2012; IEC 61000-4-4 Ed.2.1:2004 + A1:2010.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 6

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>ELECTRIC HOUSEHOLD APPLIANCES AND SIMILAR</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
ELECTRIC AND ELECTRONICS HOUSEHOLD APPLIANCES, SEGMENTS IN GENERAL (Cont.)	Immunity to Voltage Surges	CISPR 14-2 Ed.1.2:1997 + A1:2001 + A2:2008; IEC 60335-1 Ed.5.0:2010 + A1:2013 + A2:2016 Subclause 19.11.4.4; NBR NM 60335-1 Ed.2.0:2010; Subclause 19.11.4.4; IEC 61000-4-5 Ed. 3.0: 2014 +A1:2017; IEC 61000-4-5 Ed.2.0:2005; IEC 61000-4-5 Ed1.0:1995 + A1:2001.
	Immunity to Conducted Radio Frequencies Disturbances	CISPR 14-2 Ed.1.2:1997 + A1:2001 + A2:2008; IEC 60335-1 Ed.5.0:2010 + A1:2013 + A2:2016 Subclause 19.11.4.5. NBR NM 60335-1 Ed.2.0:2010; Subclause 19.11.4.5; IEC 61000-4-6 Ed. 3.0:2008; IEC 61000-4-6 Ed.2.2:2003 + A1:2004 + A2:2006.
	Immunity to Low Frequency Magnetic Fields.	IEC 61000-4-8 Ed.2.0:2009; IEC 61000-4-8 Ed.1.1:1993 + A1:2000.
	Immunity to Voltage Variations and Interruptions of Low Voltage Power Supply Networks	CISPR 14-2 Ed.1.2:1997 + A1:2001 + A2:2008; IEC 60335-1 Ed.5.0:2010 + A1:2013 + A2:2016. Subclause 19.11.4.6 and 19.11.4.8. NBR NM 60335-1 Ed.2.0:2010; Subclause 19.11.4.6 and 19.11.4.8. IEC 61000-4-11 Ed.2.0:2004 + A1:2017
	Voltage Fluctuation Immunity	IEC 61000-4-14 Ed.1.2: 2009
	Immunity to Variation of Power Frequency	IEC 61000-4-28 Ed.1.2: 2009

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 7

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>ELECTRIC HOUSEHOLD APPLIANCES AND SIMILAR</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
ELECTRIC AND ELECTRONICS HOUSEHOLD APPLIANCES, SEGMENTS IN GENERAL (Cont.)	Immunity to Voltage Dips, Short Interruptions and Voltage Variation on DC Input Power Port	IEC 61000-4-29 Ed.1.0: 2000
	Immunity Tests to Conducted and Radiated Radio Frequency Disturbances.	IEC 61000-6-1 Ed.3.0: 2016 IEC 61000-6-1 Ed.2.0: 2005
	Conducted and Irradiated Electromagnetic Disturbance Emission Test.	IEC 61000-6-3 Ed.2.0: 2006 + A1:2010
<u>ENGINES, EQUIPMENT AND ELECTRICAL MATERIALS</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
ENGINES, EQUIPMENT AND ELECTRICAL MATERIALS IN GENERAL	Immunity to Conducted and Irradiated Radio Frequency Disturbances.	IEC 61000-6-1 Ed.3.0: 2016 IEC 61000-6-1 Ed.2.0: 2005 IEC 61000-6-2 Ed.3.0: 2016 IEC 61000-6-2 Ed.2.0: 2005.
	Conducted and Radiated Electromagnetic Disturbance Emission.	IEC 61000-6-3 Ed.2.0: 2006 + A1:2010 IEC 61000-6-4 Ed.2.0: 2006 + A1:2010.
	Immunity to Electrostatic Discharges	IEC 61000-4-2 Ed.2.0: 2008
	Immunity to Radiated Electromagnetic Field	IEC 61000-4-3 Ed.3.2: 2010
	Immunity to Electrical Fast Transients/Burst - EFT/Burst.	IEC 61000-4-4 Ed.3.0: 2012
	Immunity to Voltage Surges	IEC 61000-4-5 Ed. 3.0: 2014 +A1:2017 IEC 61000-4-5 Ed. 2.0: 2005
	Immunity to Conducted Disturbances, Induced by Radio-Frequency Fields	IEC 61000-4-6 Ed. 4.0: 2013 IEC 61000-4-6 Ed. 3.0: 2008
	Magnetic Fields Immunity	IEC 61000-4-8 Ed.2.0: 2009
	Immunity to Voltage Dips, Short Interruptions and AC Voltage Variations.	IEC 61000-4-11 Ed.2.0:2004 + A1:2017 IEC 61000-4-34 Ed.1.1: 2009.
	Harmonic and Interharmonic Immunity	IEC 61000-4-13 Ed.1.1: 2002 + A1: 2009 + A2: 2015
	Voltage Fluctuation Immunity	IEC 61000-4-14 Ed.1.2: 2009

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 8

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>ENGINES, EQUIPMENT AND ELECTRICAL MATERIALS</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
ENGINES, EQUIPMENT AND ELECTRICAL MATERIALS IN GENERAL (Cont.)	Immunity to Variation of Power Frequency	IEC 61000-4-28 Ed.1.2: 2009
	Immunity to Voltage Dips, Short Interruptions and Voltage Variation on DC Input Power Port	IEC 61000-4-29 Ed.1.0: 2000
	Harmonic Current Measurement	IEC 61000-3-2 Ed.3.2: 2009
	Voltage Fluctuations and Flicker measurement	IEC 61000-3-3 Ed.3.0: 2013 +A1:2017 IEC 61000-3-3 Ed.3.0: 2008
LIGHTING ELECTRICAL EQUIPMENT AND SIMILAR	Conducted and Radiated Electromagnetic Disturbances Emissions	Ordinance Inmetro nº 389: 2014, Item 5.10. CISPR 15: 2013. ABNT NBR IEC/CISPR 15:2014.
<u>MACHINES AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
MACHINES AND EQUIPMENT IN GENERAL	Immunity to Conducted and Radiated Radio Frequency Disturbances	IEC 61000-6-1 Ed.3.0: 2016 IEC 61000-6-1 Ed.2.0: 2005 IEC 61000-6-2 Ed.3.0: 2016 IEC 61000-6-2 Ed.2.0: 2005.
	Conducted and Radiated Electromagnetic Disturbances Emission	IEC 61000-6-3 Ed.2.0: 2006 + A1:2010 IEC 61000-6-4 Ed.2.0: 2006 + A1:2010
	Immunity to Electrostatic Discharge	IEC 61000-4-2 Ed.2.0: 2008
	Immunity to Radiated Electromagnetic Field	IEC 61000-4-3 Ed.3.2: 2010
	Immunity to Electrical Fast Transients/Burst – EFT/Burst	IEC 61000-4-4 Ed.3.0: 2012
	Immunity to Voltage Surges	IEC 61000-4-5 Ed. 3.0: 2014 +A1:2017 IEC 61000-4-5 Ed. 2.0: 2005
	Immunity to Conducted Disturbances, Induced by Radio-Frequency Fields	IEC 61000-4-6 Ed. 4.0: 2013 IEC 61000-4-6 Ed. 3.0: 2008
	Immunity to Magnetic Fields	IEC 61000-4-8 Ed.2.0: 2009

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 9

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>MACHINES AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
MACHINES AND EQUIPMENT IN GENERAL (Cont.)	Immunity to Voltage Dips, Short Interruptions and AC Voltage Variations.	IEC 61000-4-11 Ed.2.0: 2004 +A1:2017 IEC 61000-4-34 Ed.1.1: 2009.
	Harmonic and Interharmonic Immunity	IEC 61000-4-13 Ed.1.1: 2002 + A1: 2009 + A2: 2015
	Voltage Fluctuation Immunity	IEC 61000-4-14 Ed.1.2: 2009
	Immunity to Variation of Power Frequency	IEC 61000-4-28 Ed.1.2: 2009
	Immunity to Voltage Dips, Short Interruptions and Voltage Variation on DC Input Power Port	IEC 61000-4-29 Ed.1.0: 2000
	Harmonic Current Measurement.	IEC 61000-3-2 Ed.3.2: 2009
	Voltage Fluctuations and Flicker Measurement	IEC 61000-3-3 Ed.3.0: 2013 +A1:2017 IEC 61000-3-3 Ed.3.0: 2008
INDUSTRIAL EQUIPMENT	Conducted and Radiated Electromagnetic Disturbances Emissions	CISPR 11 Ed.5.0:2009 + A1:2010; CISPR11 Ed.4.0:2003 + A1:2004 + A2:2006. IEC 61000-6-2 Ed. 3.0:2016; IEC 61000-6-2 Ed. 2.0:2005; IEC 61000-6-4 Ed.2.0: 2006 + A1:2010.
	Immunity to Conducted and Radiated Radio Frequency Disturbances	IEC 61000-6-1 Ed.3.0: 2016 IEC 61000-6-1 Ed.2.0: 2005 IEC 61000-6-2 Ed.3.0: 2016 IEC 61000-6-2 Ed.2.0: 2005.
	Immunity to Electrostatic Discharges	IEC 61000-4-2 Ed.2.0: 2008
	Immunity to Radiated Electromagnetic Field	IEC 61000-4-3 Ed.3.2: 2010
	Immunity to Electrical Fast Transients/Burst – EFT/Burst	IEC 61000-4-4 Ed.3.0: 2012
	Immunity to Voltage Surges	IEC 61000-4-5 Ed. 3.0: 2014 +A1:2017 IEC 61000-4-5 Ed. 2.0: 2005
	Immunity to Conducted Disturbances, Induced by Radio-Frequency Fields	IEC 61000-4-6 Ed. 4.0: 2013 IEC 61000-4-6 Ed. 3.0: 2008
	Immunity to Magnetic Fields	IEC 61000-4-8 Ed.2.0: 2009

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 10

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>MACHINES AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
INDUSTRIAL EQUIPMENT (Cont.)	Immunity to Voltage Dips, Short Interruptions and AC Voltage Variations.	IEC 61000-4-11 Ed.2.0:2004 + A1:2017 IEC 61000-4-34 Ed.1.1: 2009.
	Harmonic and Interharmonic Immunity	IEC 61000-4-13 Ed.1.1: 2002 + A1: 2009 + A2: 2015
	Voltage Fluctuation Immunity	IEC 61000-4-14 Ed.1.2: 2009
	Immunity to Variation of Power Frequency	IEC 61000-4-28 Ed.1.2: 2009
	Immunity to Voltage Dips, Short Interruptions and Voltage Variation on DC Input Power Port	IEC 61000-4-29 Ed.1.0: 2000
	Harmonic Current Measurement	IEC 61000-3-2 Ed.3.2: 2009
	Voltage Fluctuations and Flicker Measurement	IEC 61000-3-3 Ed.3.0: 2013 +A1:2017 IEC 61000-3-3 Ed.3.0: 2008
ELECTRICAL TOOLS AND SIMILAR	Conducted and Radiated Electromagnetic Disturbances Emissions. Immunity to Conducted and Radiated Radio Frequencies Disturbances.	CISPR 14-1 Ed.5.2:2005 + A1:2008 + A2:2011; CISPR 14-2: 1997 + A1:2001 +A2: 2008.
EQUIPMENT INSTALLED IN RESIDENTIAL, COMMERCIAL AND INDUSTRIAL AREAS	Conducted and Radiated Emission. Conducted and Radiated Immunity.	IEC 61000-6-1 Ed. 3.0:2016; IEC 61000-6-1 Ed. 2.0:2005; IEC 61000-6-2 Ed. 3.0:2016; IEC 61000-6-2 Ed. 2.0:2005; IEC 61000-6-3 Ed. 2.0:2006 + A1:2010; IEC 61000-6-4 Ed. 2.0:2006 + A1:2010.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 11

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>MACHINES AND MEASURING AND CONTROL INSTRUMENTS</u>	<u>ELECTRICAL, MAGNETIC, MECHANICAL AND THERMAL TESTS</u>	
NON-AUTOMATIC WEIGHING INSTRUMENT (SCALE)	<u>ELECTRICAL AND MAGNETIC TESTS</u> Performance and Immunity Test to Voltage Dips, Short Interruptions and Voltage Fluctuations (Dips) Test.	Inmetro Ordinance nº 236: 1994 Item II.B.3.1; Item II.A.5.4; Item B.2.3.
	Immunity to Electrical Fast Transients/Burst – EFT/Burst	Item II.B.3.2
	Electrostatic Discharges Immunity Test	Item II.B.3.3
	Immunity to Radiated electromagnetic Field	Item II.B.3.4
	<u>MECHANICAL TESTS</u>	Inmetro Ordinance nº 236: 1994
	Weighing Performance Determination	Item II.A.4.4
	Weighing Test	Item II.A.4.4.1
	Supplementary Weighing Test	Item II.A.4.4.5
	Tare Weighing Test	Item II.A.4.6.1
	Accuracy of Tare Adjustment	Item II.A.4.6.2
	Eccentricity Test	Item II.A.4.7
	Mobility Test	Item II.A.4.8
	Non-automatic Balancing Instrument Sensitivity Test	Item II.A.4.9
	Faithfulness Test	Item II.A.4.10
	Creep Test	Item II.A.4.11.1
	Return to Zero Test	Item II.A.4.11.2
	Balance Stability Test	Item II.A.4.12
	Unevenness	Item II.A.5.1
Preheating Test	Item II.A.5.2	
Resistance Test (Strain)	Item II.A.6	

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 12

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>ENGINES MACHINES AND MEASURING AND CONTROL INSTRUMENTS</u>	<u>ELECTRICAL, MAGNETIC, MECHANICAL AND THERMAL TESTS</u>	
NON-AUTOMATIC WEIGHING INSTRUMENT (SCALE)	<u>THERMAL TESTS</u> Static Temperature Tests Tests of the Temperature Effect in Non-Load Indication Wet Heat Test	Ordinance Inmetro nº 236: 1994 Item II.A.5.3.1 Item II.A.5.3.2 Item II.B.2.2
<u>MEDICAL-HOSPITAL AND DENTAL EQUIPMENT AND INSTRUMENTS</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
SCIENTIFIC AND MEDICAL DEVICES	Conducted and Radiated Electromagnetic Disturbances Emissions	CISPR 11 Ed.5.0:2009 + A1:2010; CISPR11 Ed.4.0:2003 + A1:2004 + A2:2006.
ELECTROMEDICAL EQUIPMENT	Electromagnetic Compatibility Tests	IEC 60601-1-2:2014 + A1:2020 NBR IEC 60601-1-2:2017 IEC 60601-1-2:2004; NBR IEC 60601-1-2:2006; IEC 60601-1-2:2007; NBR IEC 60601-1-2:2010; Except Section 5.2.
	Electrostatic Discharge Immunity	IEC 61000-4-2 Ed.2.0:2008; IEC 61000-4-2: E.1.0:1995 + A1:1998 + A2:2000.
	Immunity to Radiated Radio Frequency Disturbances	IEC 61000-4-3 Ed.3.0: 2006/2008 + A2:2010; IEC 61000-4-3 Ed. 2.0:2002.
	Immunity to Electrical Fast Transients at Power and Telecommunications Terminals	IEC 61000-4-4 Ed.3.0:2012; IEC 61000-4-4 Ed.2.1:2004 + A1:2010.
	Immunity to Voltage Surges	IEC 61000-4-5 Ed. 3.0: 2014 +A1:2017 IEC 61000-4-5 Ed.2.0: 2005; IEC 61000-4-5 Ed1.0: 1995 + A1:2001.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 13

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>MEDICAL-HOSPITAL AND DENTAL EQUIPMENT AND INSTRUMENTS</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
ELECTROMEDICAL EQUIPMENT (Cont.)	Immunity to Conducted Radio Frequencies Disturbances	IEC 61000-4-6 Ed. 3.0: 2008; IEC 61000-4-6 Ed.2.2: 2003 + A1:2004 + A2:2006.
	Immunity to Low Frequency Magnetic Fields	IEC 61000-4-8 Ed.2.0: 2009; IEC 61000-4-8 Ed.1.1: 1993 + A1:2000.
	Immunity to Voltage Variations and Voltage Interruptions.	IEC 61000-4-11 Ed.2.0:2004 + A1:2017.
	Harmonic and Interharmonic Immunity	IEC 61000-4-13 Ed.1.1: 2002 + A1: 2009 + A2: 2015
	Voltage fluctuation Immunity	IEC 61000-4-14 Ed.1.2: 2009
	Immunity to Variation of Power Frequency	IEC 61000-4-28 Ed.1.2: 2009
	Immunity to Voltage Dips, Short Interruptions and Voltage Variation on DC Input Power Port	IEC 61000-4-29 Ed.1.0: 2000
	Immunity to Voltage Dips, Short Interruptions and AC Voltage Varitions.	IEC 61000-4-34 Ed.1.1: 2009
	Conducted and Radiated Electromagnetic Disturbances Emission	CISPR 25 Ed. 4.0: 2016 CISPR 25 Ed.3.0: 2008; ABNT NBR IEC CISPR25 Ed.1.0: 2010.
	Conducted Emssion of Electrical Transient	ISO 7637-1 Ed.3.0: 2015; ISO 7637-2 Ed.3.0:2011.
	Harmonics Measurement	IEC 61000-3-2 Ed.3.2:2005 + A1:2008 + A2:2009.
	Voltage Fluctuations and Flicker Measurement	IEC 61000-3-3 Ed.3.0: 2013 +A1:2017 IEC 61000-3-3 Ed.2.0:2008.
ELECTRONS ACCELERATORS IN THE 1 MeV to 5 MeV RANGE	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-1 Ed.1.0 :2013 Section 201.17

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 14

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>MEDICAL-HOSPITAL AND DENTAL EQUIPMENT AND INSTRUMENTS</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
HIGH FREQUENCY SURGICAL EQUIPMENT AND HIGH FREQUENCY SURGICAL MATERIALS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-2 Ed.2.0: 2013 Sections 201.17 and 202
SHORT-WAVES THERAPY EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-3 Ed.2.0: 2014 Section 201.17
CARDIAC DEFIBRILLATORS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-4 Ed.2.0: 2014 Sections 201.17 and 202
ULTRASOUND PHYSIOTHERAPY EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-5 Ed.2.0: 2012 + Corr.:2013 Sections 201.17 and 202
MICROWAVES THERAPY EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-6 Ed.2.0: 2014 Sections 201.17 and 202
HIGH VOLTAGE GENERATORS OF X-RAY GENERATORS FOR MEDICAL DIAGNOSIS	Electromagnetic Compatibility Tes	ABNT NBR IEC 60601-2-7: 2001 Section V - Clause 36
NERVES AND MUSCLE STIMULATORS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-10 Ed.2.0: 2014 Sections 201.17 and 202
CRITICAL CARE FAN	Electromagnetic Compatibility Tests	ABNT NBR ISO 80601-2-12 Ed.1.0: 2014 Sections 201.17 and 202
ANESTHESIA SYSTEMS	Electromagnetic Compatibility Tests	ABNT NBR ISO 80601-2-13 Ed.1.0: 2011 Sections 201.17 e 202 ABNT NBR IEC 60601-2-13 Ed.2.0: 2004 Section V - Clause 36

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 15

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>MEDICAL-HOSPITAL AND DENTAL EQUIPMENT AND INSTRUMENTS</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
EQUIPMENT FOR ELECTROCONVULSO-THERAPY	Electromagnetic Compatibility Tests	ABNT NBR IEC 601-2-14: 1998 Section V - Clause 36
HEMODIALYSIS, HEMODIAFILTRATION AND HEMOFILTRATION EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-16 Ed.2.0: 2015 Sections 201.17 and 202
ENDOSCOPIC EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-18 Ed.2.0: 2014 Sections 201.17 and 202
INCUBATORS FOR NEWBORNS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-19 Ed.2.0: 2014 + A1:2019 Sections 201.17 and 202
TRANSPORT INCUBATORS FOR NEWBORNS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-20 Ed.2.0: 2012 + Corr.:2014 + A1:2019 Sections 201.17 and 202
RADIANT HEATERS FOR NEWBORNS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-21 Ed.2.0: 2013 + Corr. :2014 + A1:2019 Sections 201.17 and 202
LASER EQUIPMENT FOR SURGERY, COSMETIC, THERAPEUTIC AND DIAGNOSTIC USE	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-22 Ed.3.0: 2014 Section 201.17
TRANSCUTANEOUS PARTIAL PRESSURE MONITORING EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-23 Ed.1.0: 2012 + Corr. :2013 Sections 201.17 and 202
INFUSION PUMPS AND INFUSION CONTROLLERS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-24 Ed.2.0: 2015 Sections 201.17 and 202
ELECTRO-CARDIOGRAPHERS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-25 Ed.2.0: 2014 Sections 201.17 and 202

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 16

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>MEDICAL-HOSPITAL AND DENTAL EQUIPMENT AND INSTRUMENTS</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
ELECTRO-ENCEPHALOGRAPH	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-26 Ed.2.0: 2014 Sections 201.17 and 202
ELECTROCARDIOGRAPHIC MONITORING EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-27 Ed.2.0: 2013 Sections 201.17 and 202
RADIATION X EMITTING SET FOR MEDICAL DIAGNOSIS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-28 Ed.2.0: 2012 + Corr.: 2013 Sections 201.17 and 202
EQUIPMENT FOR AUTOMATIC AND CYCLICAL MONITORING OF INDIRECT BLOOD PRESSURE (NOT INVASIVE)	Electromagnetic Compatibility Tests	ABNT NBR IEC 601-2-30: 1997 Section V - Clause 36
NON-INVASIVE AUTOMATIC ESFIGMOMANOMETER	Electromagnetic Compatibility Tests	ABNT NBR ISO 80601-2-30: 2014 Sections 201.17 and 202
EXTERNAL CARDIAC PACEMAKER WITH INTERNAL ELECTRIC POWER SUPPLY	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-31 Ed.3.0: 2014 Sections 201.17 and 202
EQUIPMENT ASSOCIATED WITH X-RAY EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-32: 2001 Section V - Clause 36
MAGNETIC RESONANCE EQUIPMENT	Electromagnetic Compatibility Tests	IEC 60601-2-33: 2015 Sections 201.17 and 202
INVASIVE BLOOD PRESSURE MONITORING EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-34 Ed.2.0: 2014 Sections 201.17 and 202

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 17

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>MEDICAL-HOSPITAL AND DENTAL EQUIPMENT AND INSTRUMENTS</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
BLANKETS, PILLOWS AND MATTRESS FOR HEATING	Electromagnetic Compatibility Tests	ABNT NBR IEC 80601-2-35 Ed.1.0: 2013 + Corr.2:2014 Sections 201.17 e 202 ABNT NBR IEC 60601-2-35 Ed.1.0: 2006 Seção V - Cláusula 36
EXTRACORPOREAL EQUIPMENT FOR INDUCED LITHOTRIPSY	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-36 Ed.1.0: 2006 Section V - Clause 36
MEDICAL EQUIPMENT FOR MONITORING AND ULTRASOUND DIAGNOSIS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-37 Ed.2.0: 2016 Sections 201.17 and 202.6
ELECTRICALLY OPERATED HOSPITAL BEDS	Electromagnetic Compatibility Tests	ABNT NBR IEC 601-2-38: 1998 Section V - Clause 36
PERITONEAL DIALYSIS EQUIPMENT	Electromagnetic Compatibility Testing	ABNT NBR IEC 60601-2-39 Ed.1.0: 2010 + Corr.: 2013 Sections 201.17 and 202
ELECTROMYOGRAPHERS AND EVOKED POTENTIAL EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-40: 1998 Section V - Clause 3
SURGICAL LUMINAIRE AND LUMINAIRES FOR DIAGNOSIS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-41 Ed.2.0: 2014 Section 201.17
X-RAY EQUIPMENT FOR INTERVENTION PROCEDURES	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-43 Ed.2.0: 2012 + Corr.: 2013 Sections 201.17 and 202
X-RAY EQUIPMENT FOR COMPUTED TOMOGRAPHY	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-44 Ed.2.0: 2012 + Corr.:2013 Sections 201.17 and 202

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 18

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>MEDICAL-HOSPITAL AND DENTAL EQUIPMENT AND INSTRUMENTS</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
X-RAY EQUIPMENT FOR MAMMOGRAPHY AND MAMOGRAPHIC STEREOTAXIS DEVICES	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-45 Ed.2.0: 2013 + Corr.:2013 Sections 201.17 and 202
SURGERY TABLE	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-46 Ed.2.0: 2012 + Corr.: 2013 Sections 201.17 and 202
CLINIC ELECTROCARDIOGRAPHIC SYSTEMS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-47 Ed.2.0: 2014 Sections 201.17 and 202
MULTIFUNCTIONAL EQUIPMENT FOR PATIENT MONITORING	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-49 Ed.2.0: 2014 Sections 201.17 and 202
PHOTOTHERAPY EQUIPMENT FOR NEWBORN	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-50 Ed.2.0: 2010 + Corr.2:2015 +A1:2019 Sections 201.17 and 202
ELECTROCARDIOGRAPH RECORD AND MONOCAL AND MULTICANAL ANALYZER	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-51 Ed.1.0: 2005 Section V - Clause 36
HOSPITAL BEDS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-52 Ed.1.0: 2013 + Corr.:2013 Section 201.17
X-RAY EQUIPMENT FOR RADIOGRAPHY AND RADIOSCOPY	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-54 Ed.1.0: 2011 + Corr.: 2013 Sections 201.17 and 202
CLINICAL THERMOMETERS FOR BODY TEMPERATURE MEASUREMENT	Electromagnetic Compatibility Tests	ABNT NBR ISO 80601-2-56 Ed.1.0: 2013 Sections 201.17 and 202

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 19

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>MEDICAL-HOSPITAL AND DENTAL EQUIPMENT AND INSTRUMENTS</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
NON-LASER LIGHT SOURCE INTENDED FOR THERAPEUTIC, DIAGNOSTIC, COSMETIC / AESTHETIC AND MONITORING / SUPERVISION USE	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-57 Ed.1.0: 2015 Section 201.17
DEVICES FOR CRYSTALLINE REMOVAL AND DEVICES FOR VITRECTOMY FOR OPHTHOLOGICAL SURGERY	Electromagnetic Compatibility Tests	ABNT NBR ISO 80601-2-58 Ed.1.0: 2013 + Corr.2: 2014 Sections 201.17 and 202
DENTAL EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR ISO 80601-2-60 Ed.1.0: 2015 Section 201.17
PULSE OXIMETRY EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR ISO 80601-2-61 Ed.1.0: 2015 Sections 201.17 and 202
HIGH INTENSITY THERAPEUTIC ULTRASOUND EQUIPMENT (HITU)	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-62 Ed.1.0: 2015 Sections 201.17 and 202
EXTRA-ORAL DENTAL X-RAY EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-63 Ed.1.0: 2015 Sections 201.17 and 202
INTRA-ORAL DENTAL X-RAY EQUIPMENT	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-2-65 ed.1.0: 2014 Sections 201.17 and 202
WHEELCHAIRS AND SCOOTERS MOTORIZED AND BATTERY CHARGERS	Electromagnetic Compatibility Tests	ISO 7176-21 Ed.2.0: 2009

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 20

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>MEDICAL-HOSPITAL AND DENTAL EQUIPMENT AND INSTRUMENTS</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
BATTERIES AND CHARGERS FOR MOTORIZED WHEELCHAIRS	Electromagnetic Compatibility Tests	ISO 7176-25 Ed.1.0: 2013 Section 5.4
MANUAL DENTAL EQUIPMENT AND WITH MOTOR	Electromagnetic Compatibility Tests	ISO 14457 Ed.1.0: 2012 Section 5.12
ELECTROMEDICAL EQUIPMENT USED IN DOMESTIC ENVIRONMENTS	Electromagnetic Compatibility Tests	ABNT NBR IEC 60601-1-11 Ed.1.0: 2012 + Corr.: 2013 Section 12
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
RF POWER AMPLIFIER	Output Power; Gain; Non-Essential Emissions. Intermodulation.	Technical Requirements and Test Procedures Apply for Product Certification for Telecommunications Category II (ANATEL)
RF POWER AMPLIFIER FOR GROUND STATION	Spurious Emissions in the Frequency Band Operation; Unwanted Emissions Outside the Operating Range; Frequency Stability of RF Carrier; Spectrum at Amplifier Power Output.	ANATEL Act nº. 941, February 08, 2018
	Spurious Emissions (Except from Intermodulation); Spurious Emissions (From Intermodulation); RF Emissions out of Range; Phase Noise; Spectrum Emission	ETSI EN 301 126-1 V1.1.2:1999.
LAND STATION ANTENNA OPERATING WITH GEOSTATIONARY SATELLITES	Gain; Radiation Diagrams; Return Loss; Insertion Loss.	ANATEL Act nº 939, February 08, 2018 Itens 8.2; 8.3; 8.4; 8.5

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 21

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
POINT-TO-POINT ANTENNA	Gain; Radiation Diagrams; Cross-Polarization Discrimination; Return Loss; Insertion Loss.	ANATEL Act n° 932, February 08, 20188.2; Itens 8.3; 8.3.c; 8.4; 8.5
AREA POINT ANTENNA	Gain; Radiation Diagrams; Return Loss (COE); Passive Intermodulation (PIM); Insertion Loss.	ANATEL Act n° 953, February 08, 20188.2; Itens 8.3; 8.4; 8.5; 8.6
RESTRICTED RADIATION RADIOCOMMUNICATION EQUIPMENT, SPECTRAL SPREADING TRANSCeptORS AND OTHER TELECOMMUNICATIONS EQUIPMENT	Canalization; Transmission Power Control; Power Spectral Density; Radiated Emission; Spurious Emission; Channel Spacing; Frequency Stability; Bandwidth; Frequency Hopping; Transmission Power; Dynamic Frequency Selection; Carriers Spacing; Channel Jump's suppression; Occupancy Time.	Annex to ANATEL Resolution n°. 680 (2017) ANATEL Act n°. 6506, August 27, 2018 ANATEL Act n°. 14448, December 4, 2017 ANATEL Act n°. 1379, February 28, 2019 CFR FCC PART 18 Subpart C §18.305 Ordinance No. 176, June 10, 1992 - STANDARD n°. 02/92 - Item 7.2 ANATEL Act n°. 493, January 30, 2017 ANATEL Act n°. 3481, May 31, 2019
	Average Power	ANATEL Act n° 955, February 08, 2018 Item 3.1.4.
UP CONVERTER FOR GROUND STATION	Spurious Emissions in the Frequency Band of Operation; Unwanted Emissions Outside the Operating Range; Frequency Stability of RFCarriers; Spectrum at Amplifier Power Output	ANATEL Act n°. 941, February 8, 2018

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 22

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
INFORMATION TECHNOLOGY AND EQUIPMENT	ELECTRICAL AND MAGNETIC TESTS	
RECHARGEABLE LITHIUM BATTERY	Actual Capacity in Nominal Condition; Capacity with High Discharge Current Condition; Load Retention - Auto Discharge; Capacity Recovery After Load Retention; Capacity Recovery After Partial Load Storage; Performance Against Loading and Unloading Cycles(Durability); Internal Resistance; Electrostatic Discharge Immunity; Extended Charge; High Temperature Stress; Thermal Cycling; External Short Circuit; Free Fall; Thermal Abuse; Overload.	ANATEL Act n ^o . 951, February 8, 2018 ANATEL Act n ^o 3484, May 31, 2019 IEC 61960/ 2011 IEC 61960-3: 2017 IEC 62133-1: 2017 IEC 62133-2: 2017
EQUIPMENT WITH TERMINAL FUNCTION WITH AIR INTERFACE FOR MOBILE SERVICES	Inter-RAT Cell Re-selection / From UTRA_CELL PCH State to E-UTRA RRC_IDLE	3GPP TS 36.523-1 V12.3.0 Item 6.2.3.4
	Inter-RAT cell Re-selection / From UTRA_IDLE to EUTRA RRC_IDLE According to RAT Priority Provided by Dedicated Signaling.	3GPP TS 36.523-1 V12.3.0 Item 6.2.3.13
	Inter-RAT Cell Re-selection / From UTRA_IDLE (Low Priority) to E-UTRA RRC_IDLE (High Priority) According to RAT Priority Provided by Dedicated Signaling.	3GPP TS 36.523-1 V12.3.0 Item 6.2.3.31
	UE Capability Transfer / Success.	3GPP TS 36.523-1 V12.3.0 Item 8.5.4.1
	UE initiated detach / Mapped security context.	3GPP TS 36.523-1 V12.3.0 Item 9.2.2.1.10
	First LU mode to S1 mode inter-system change after attach.	3GPP TS 36.523-1 V12.3.0 Item 9.2.3.3.1
	Periodic Location Update	3GPP TS 36.523-1 V12.3.0 Item 9.2.3.3.5a
	EPS Bearer Context Modification / Success	3GPP TS 36.523-1 V12.3.0 Item 10.3.1
	UE Requested PDN Connectivity Accepted by the Network	3GPP TS 36.523-1 V12.3.0 Item 10.5.1
	UE Requested PDN Connectivity Not Accepted	3GPP TS 36.523-1 V12.3.0 Item 10.5.3
	Traffic Class Non-Zero – End Node	RFC 2460 - Group 1: IPv6 Header V6LC.1.1.2

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 23

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
INFORMATION TECHNOLOGY AND EQUIPMENT	ELECTRICAL AND MAGNETIC TESTS	
EQUIPMENT WITH TERMINAL FUNCTION WITH AIR INTERFACE FOR MOBILE SERVICES(Cont.)	Flow Label Non-Zero	RFC 2460 - Group 1: IPv6 Header V6LC.1.1.4
	Payload Length	RFC 2460 - Group 1: IPv6 Header V6LC.1.1.5
	No Next Header After IPv6 Header	RFC 2460 - Group 1: IPv6 Header V6LC.1.1.6
	Next Header Zero	RFC 2460 - Group 2: Extension Headers and Options V6LC.1.2.1
	No Next Header After Extension Header	RFC 2460 - Group 2: Extension Headers and Options V6LC.1.2.2
	Unrecognized Next Header In Extension Header – End Node	RFC 2460 - Group 2: Extension Headers and Options V6LC.1.2.3
	Extension Header Processing Order	RFC 2460 - Group 2: Extension Headers and Options V6LC.1.2.4
	Option Processing Order	RFC 2460 - Group 2: Extension Headers and Options V6LC.1.2.5
	Option Processing, Destination Options Header	RFC 2460 - Group 2: Extension Headers and Options V6LC.1.2.8
	Fragment Reassembly	RFC 2460 - Group 3: Fragmentation V6LC.1.3.1
	Reassembly Time Exceed	RFC 2460 - Group 3: Fragmentation V6LC.1.3.2
	Fragment Header M-BIT, Payload Length Invalid	RFC 2460 - Group 3: Fragmentation V6LC.1.3.3
	RQ_000_7001 Configure Address	ETSI TS 102 514 V2.1.1 Item 4.3
	RQ_000_7002 Configure Address	ETSI TS 102 514 V2.1.1 Item 4.3
	RQ_000_7003 Configure Address	ETSI TS 102 514 V2.1.1 Item 4.1
	RQ_000_7024 Form Link-local Address	ETSI TS 102 514 V2.1.1 Item 4.3
	RQ_000_7030 Stateless Autoconfiguration	ETSI TS 102 514 V2.1.1 Item 4.3

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 24

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
EQUIPMENT WITH TERMINAL FUNCTION WITH AIR INTERFACE FOR MOBILE SERVICES (Cont.)	RQ_000_7050 Unicast Address	ETSI TS 102 514 V2.1.1 Item 4.3
TERMINAL ACCESS STATION - SMP ETA	CDMA Technology: Frequency Accuracy; Range of Open Loop Output Power Maximum RF Output Power; Minimum Controlled Output Power; Conducted Spurious Emission	TIA / EIA-98-C; Items 4.1.1; 4.4.1; 4.4.5; 4.4.6; 4.5.1
	CDMA 2000 Technology: Frequency Accuracy; Range of Open Loop Output Power Maximum RF Output Power; Conducted Spurious Emission.	3GPP2 CS 011-A; Items 4.1; 4.4.1; 4.4.5; 4.5.1
	TDMA Technology: Frequency Stability; Digital RF Output Power; Conducted Spurious and Harmonics Emission	TIA / EIA / IS-137-A; Items 3.1.2.2; 3.2.1.2; 3.4.2.2
	GSM Technology - GSM 850, GSM 900, DCS 1800 and PCS1900: Conducted Spurious Emission - Communication Terminal; Conducted Spurious Emission - Inactive Terminal; Frequency and Phase Error; Transmission Output Power, Power Control and Burst Time. Output RF Spectrum.	GSM - 3GPP TS 51.010-1 V6.5.0 / V7.8.0 / V8.4.0 / V13.3.0 Items 12.1.1; 12.1.2; 13.1; 13.3; 13.4

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 25

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
TERMINAL ACCESS STATION - SMP ETA (Cont.)	GSM / GPRS Technology - GSM 850, GSM 900, DCS 1800 and PCS1900: Conducted Spurious Emission - Communication Terminal; Conducted Spurious Emission - Inactive Terminal; Output RF Spectrum; Frequency and Phase Error in the GPRS Multislot Configuration; Transmission Output Power in GPRS Multislot Configuration; Output RF Spectrum in Multislot GPRS Configuration.	GSM - 3GPP TS 51.010-1 V6.5.0 / V7.8.0 / V8.4.0 / V13.3.0. Items 12.1.1; 12.1.2; 13.4; 13.16.1;13.16.2; 13.16.3
	GSM / EDGE Technology - GSM 850, GSM 900, DCS 1800 and PCS1900: Conducted Spurious Emission - Communication Terminal; Conducted Spurious Emission - Inactive Terminal; Output RF Spectrum; Frequency Error and Modulation Accuracy in the EGPRS Configuration; Transmission Output Power in the EGPRS Configuration; Output RF Spectrum in the EGPRS Cnfiguration.	GSM - 3GPP TS 51.010-1 V6.5.0 / V7.8.0 / V8.4.0 / V13.3.0. Items 12.1.1; 12.1.2; 13.4; 13.17.1;13.17.3; 13.17.4
	WCDMA / HSDPA / HSUPA Technology Maximum Output Power; Maximum Output Power with HS-DPCCH; Maximum Output Power with HS-DPCCH and E-DCH; EU Relative Code Domain Power Accuracy.	ETSI TS 134 121-1 V9.1.0 / 9.4.0 // V13.1.0 Items 5.2; 5.2AA; 5.2B; 5.2C
	WCDMA / HSDPA / HSUPA Technology Relative code Domain Power Accuracy for HS-DPCCH and E-DCH; Frequency Error; Open Loop Power Control in the Uplink; Inner Loop Power Control in the Uplink; Minimum Output Power; Power Emitted with the Transmitter Turned Off; Transmitter Temporal Mask.	ETSI TS 134 121-1 V9.1.0 / 9.4.0 // V13.1.0 Items5.2D; 5.3; 5.4.1; 5.4.2; 5.4.3; 5.5.1; 5.5.2; 5.7

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 26

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
TERMINAL ACCESS STATION - SMP ETA (Cont.)	Power Setting in Uplink Compressed Mode; HS-DPCCH POWER CONTROL; Spectrum Emission Mask; Spectrum Emission Mask of HS-DPCCH; Spectrum Emission Mask of E-DCH; Conducted Spurious Emissions; Error Vector Magnitude; Error Vector Magnitude with HS-DPCCH; Error Vector Magnitude and Phase Discontinuity with HSDPCCH. Relative Code Domain Error with HS-DPCCH; Relative Code Domain Error with HS-DPCCH and E-DCH.	ETSI TS 134 121-1 V9.1.0 / 9.4.0 // V13.1.0 Items 5.7A; 5.9; 5.9A; 5.9B; 5.11;5.13.1 ; 5.13.1 A; 5.13.1AA; 5.13.2A; 5.13.2B
	HSUPA+ Technology Relative Code Domain Power Accuracy for HS-DPCCH and E-DCH with 16QAM EVM and IQ Origin Offset for HS-DPCCH and E-DCH with 16 QAM Relative Code Domain Error for HS-DPCCH and E-DCH with 16QAM	ETSI TS 134 121-1 V9.4.0 / V13.1.0 Items 5.2E; 5.13.1AAA; 5.13.2C
	LTE Technology Transmission Power Maximum Power Reduction Configured UE Transmitted Output Power Minimum Output Power Transmission / Reception Time Mask Frequency Stability Error Vector Magnitude - EVM Carrier Power Deviation Operating Band Unwanted Emissions Occupied Bandwidth Spectrum Emission Mask Adjacent Channel Leakage Power Ratio Conducted Spurious Emissions.	3GPP TS 36.521-1 V9.5.0 / V14.5.0 Items 6.2.2; 6.2.3;6.2.5;6.3.2; 6.3.4.1;6.5.1; 6.5.2.1; 6.5.2.2; 6.5.2.3; 6.6.1; 6.6.2.1; 6.6.2.3; 6.6.3.1

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 27

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<p><u>INFORMATION TECHNOLOGY AND EQUIPMENT</u> TERMINAL ACCESS STATION - SMP ETA (Cont.)</p>	<p><u>ELECTRICAL AND MAGNETIC TESTS</u> Nb-IoT LTE Cat. M1: UE Maximum Output Power for UE category M1; Maximum Power Reduction (MPR) for UE category M1; Additional Maximum Power Reduction (A-MPR) for UE category M1; Configured UE transmitted Output Power for UE category M1; Minimum Output Power for UE category M1; UE Transmit OFF power for UE category M1; ON/OFF time mask for UE category M1; Power Control for UE category M1; Frequency Error for UE category M1; Frequency Error for UE category M1 (CEmodeB); Error Vector Magnitude (EVM) for UE category M1; Carrier leakage for UE category M1; In-band emissions for non allocated RB for UE category M1; EVM equalizer spectrum flatness for UE category M1; Occupied bandwidth for UE category M1; Spectrum Emission Mask for UE category M1; Additional Spectrum Emission Mask for UE category M1; Adjacent Channel Leakage Power Ratio for UE category M1; Spurious emission for UE category M1; Transmit intermodulation for UE category M1; Reference sensitivity level for UE category M1; Maximum input level for UE category M1; Adjacent Channel Selectivity (ACS) for category M1; In-band blocking for UE category M1; Narrow band blocking for UE category M1; Wide band Intermodulation for UE category M1; Spurious emissions for UE category M1.</p>	<p>3GPP TS 36.521-1 1 Ver 14.4.0 ETSI TS 136 521-1 V14.4.0 6.2.2EA; 6.2.3EA; 6.2.4EA; 6.2.5EA; 6.3.2EA; 6.3.3EA; 6.3.4EA; 6.3.5EA; 6.5.1EA; 6.5.1EA_1; 6.5.2.1EA; 6.5.2.2EA; 6.5.2.3EA; 6.5.2.4EA; 6.6.1EA; 6.6.2.1EA; 6.6.2.2EA; 6.6.2.3EA; 6.6.3EA; 6.7EA; 7.3EA; 7.4EA; 7.5EA; 7.6.1EA; 7.6.3EA; 7.8.1EA; 7.9EA.</p>

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 28

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<p><u>INFORMATION TECHNOLOGY AND EQUIPMENT</u> TERMINAL ACCESS STATION - SMP ETA (Cont.)</p>	<p><u>ELECTRICAL AND MAGNETIC TESTS</u> Nb-IoT Cat. NB1 UE Maximum Output Power for UE category NB1; Maximum Power Reduction (MPR) for UE category NB1; Configured UE transmitted Output Power for UE category NB1; Minimum Output Power for UE category NB1; UE Transmit OFF power for UE category NB1; ON/OFF time mask for UE category NB1; Power Control for UE category NB1; Frequency Error for UE category NB1; Error Vector Magnitude (EVM) for UE category NB1; Carrier leakage for UE category NB1; In-band emissions for non allocated RB for UE category NB1; Occupied bandwidth for UE category NB1; Spectrum Emission Mask for UE category NB1; Adjacent Channel Leakage Power Ratio for UE category NB1; Spurious emission for UE category NB1; Transmit intermodulation for UE category NB1; Reference sensitivity level for UE category NB1; Maximum input level for UE category NB1; Adjacent Channel Selectivity (ACS) for category NB1; In-band blocking for UE category NB1; Wide band Intermodulation for UE category NB1.</p>	<p>3GPP TS 36.521-1 1 Ver 14.4.0 ETSI TS 136 521-1 V14.4.0 6.2.2F; 6.2.3F; 6.2.5F; 6.3.2F ; 6.3.3F ; 6.3.4F; 6.3.5F; 6.5.1F; 6.5.2.1F.1; 6.5.2.2F; 6.5.2.3F; 6.6.1F; 6.6.2.1F; 6.6.2.3.F; 6.6.3F; 6.7F; 7.3F; 7.4F; 7.5F; 7.6.1F; 7.8.1F</p>

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 29

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
INFORMATION TECHNOLOGY AND EQUIPMENT	ELECTRICAL AND MAGNETIC TESTS	
TERMINAL ACCESS STATION - STFC ETA WITH WIRELESS ACCESS	Spurious Emissions Outside the Transmission Range; Spurious Emissions; Receiver Immunity.	ANATEL Resolution n°. 146 Arts. 15; 16; 17; 18.
	Occupied Bandwidth; Transmission Power.	ANATEL Resolution n°. 169 Arts: 4; 5
	Maximum Transmission Power; Spurious Emissions outside the Transmission Range; Spurious emission with inactiveTtransmitter.	ANATEL Resolution n°. 309 Arts: 5; 9; 10; 11.
	HSUPA + Technology Output Power Density (EIRP).	ANATEL Resolution n°. 313 Art: 4
	Carrier output power standard; Conducted Spurious Emission.	TIA / EIA-603: 2004
	Maximum Transmission Power.	ANATEL Resolution n°. 453 Art: 6
PORTABLE TERMINAL STATIONS; MOBILE PHONE; TRANSCEIVERS: SATELLITE MOBILE, ANALOG TRONCALIZED - MOBILE AND PORTABLE; DIGITAL TRONCALIZED - MOBILE AND PORTABLE	Determination of the Specific Absorption Rate (SAR).	ANATEL Act n° 955, February 8, 2018 IEEE 1528/2003; BS EN 50361:2001 CENELEC; IEC 62209-1:2005; IEC 62209-2: 2010.
RESIDENTIAL FEMTOCELL	WCDMA Technology Maximum Output Power (Home BS) Frequency Stability (Home BS) Power Control For Adjacent Channel Protection (Home BS) Bandwidth RF Output Spectrum (Home BS) Interference Ratio to the Adjacent Channel Spurious Emissions from the Transmitter Spurious Emissions from the Receiver	ETSI TS 125 141 V10.9.0 Items 6.2.1; 6.3; 6.4.6; 6.5.1; 6.5.2.1; 6.5.2.2; 6.5.3.7.2; 7.7

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 30

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
RESIDENTIAL FEMTOCELL(Cont.)	LTE Technology Transmission Power Power Control for Adjacent UTRA Channel Protection (Home BS) Power Control for Adjacent E-UTRA Channel Protection (Home BS) Transmission / Reception Period (for TDD Mode) Frequency Stability Bandwidth Adjacent Channel Leakage Power Ratio (Home BS) Operating Band Unwanted Emissions (Home BS) Spurious Emissions from the Transmitter Spurious Emissions from the Receiver.	3GPP TS 36.141 V9.8.0 Items 6.2; 6.2.6; 6.2.7; 6.4; 6.5.1; 6.6.1; 6.6.2; 6.6.3.5.2; 6.6.4.5.2; 7.7
ETI, TELECOMMUNICATIONS, ELECTRIC-ELECTRONIC, RECTIFIER SYSTEM AND RECTIFIER UNIT	Emission of Conducted And Radiated Electromagnetic Disturbances.	CISPR 22: 2005 + A1:2005 + A2:2006; CISPR 22 Ed.6.0: 2008; CISPR 32 Ed. 2.0 (2015) ITU-T K38:2005; ANATEL Act n° 1120, February 19, 2018. ANATEL Act n° 930, February 08, 2018. ANATEL Act n° 931, February 08, 2018.
	Immunity to Electrostatic Discharges	IEC 61000-4-2 Ed.2.0: 2008; IEC 61000-4-2: E.1.0: 1995 + A1:1998 + A2:2000; ANATEL Act n° 1120, February 19, 2018. ANATEL Act n° 930, February 08, 2018. ANATEL Act n° 931, February 08, 2018.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 31

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
ETI, TELECOMMUNICATIONS, ELECTRIC-ELECTRONIC, RECTIFIER SYSTEM AND RECTIFIER UNIT (Cont.)	Immunity to Radiated Radio Frequency Disturbances	IEC 61000-4-3 Ed.3.0:2006/2008 + A2:2010; IEC 61000-4-3 Ed. 2.0:2002; ANATEL Act n° 1120, February 19, 2018.
	Immunity to Electrical Fast Transients in Electrical Power and Telecommunications Terminals	IEC 61000-4-4 Ed.3.0: 2012; IEC 61000-4-4 Ed.2.1: 2004 + A1: 2010; ISO 7637-2 Ed.3.0: 2011 ETSI EN 301 489-1 V1.9.2 (2011-09) Item 9.6 ANATEL Act n° 493, January 30, 2017. ANATEL Act n° 1120, February 19, 2018
	Immunity to Voltage Surges in Electric Power and Telecommunications Terminals	IEC 61000-4-5 Ed. 3.0: 2014 + A1: 2017 IEC 61000-4-5 Ed.2.0: 2005; IEC 61000-4-5 Ed1.0: 1995 + A1: 2001; ANATEL Act n° 1120, February 19, 2018 ANATEL Act n° 930, February 8, 2018; ANATEL Act n° 931, February 8, 2018
	Immunity to Low Frequency Magnetic Fields	IEC 61000-4-8 Ed.2.0:2009; IEC 61000-4-8 Ed.1.1:1993 + A1:2000
	Immunity to Conducted Radio Frequencies in Electric Power and Telecommunications Terminals	IEC 61000-4-6 Ed. 3.0: 2008; IEC 61000-4-6 Ed.2.2: 2003 + A1:2004 + A2:2006; ANATEL Act n° 1120, February 19, 2018.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 32

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
ETI, TELECOMMUNICATIONS, ELECTRIC-ELECTRONIC, RECTIFIER SYSTEM AND RECTIFIER UNIT (Cont.)	Immunity to Mains Voltage Variations and Interruptions	IEC 61000-4-11 Ed.2.0:2004; ANATEL Act nº 1120, February 19, 2018.
	Harmonic and Interharmonic Immunity Test	IEC 61000-4-13 Ed.1.1: 2002 + A1: 2009 + A2: 2015
	Voltage Fluctuation Immunity Test	IEC 61000-4-14 Ed.1.2: 2009
	Immunity to Variation of Power Frequency	IEC 61000-4-28 Ed.1.2: 2009
	Immunity to Voltage Dips, Short Interruptions and Voltage Variation on DC Input Power Port	IEC 61000-4-29 Ed.1.0: 2000
	Immunity Test For Voltage Dips, Short Interruptions and AC Voltage Variations	IEC 61000-4-34 Ed.1.1: 2009
	Immunity to Radiated and Conducted Radio Frequency Disturbances.	CISPR 24 Ed.2.0:2010 + Corr.:2011 + A1: 2015
	Resistance to Electromagnetic Disturbances	ITU-T K21: 2003/2011; ITU-T K44: 2003/2012.
	Harmonic Measurement.	IEC 61000-3-2 Ed.3.2:2005 + A1:2008 + A2:2009.
	Voltage Fluctuations and Flicker Measurement	IEC 61000-3-3 Ed.3.0: 2013 + A1: 2017 IEC 61000-3-3 Ed.2.0: 2008.
	Fire Risk; Electric Shock; Excessive Heating.	ANATEL Act nº 950, February 8, 2018. Except Item 5

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 33

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
MODEM FOR GROUND STATION	Power Spectral Density at the Modulator Output; Modem Performance Operating In Intermediate Frequency Loop (FI); Modem Performance Operating in Intermediate; frequency Loop (FI) in the Presence of Interference from Adjacent Channels; Transceiver Performance Operating in Radio Frequency Loop (RF); Spurious Emissions in the Operating Frequency Range; Unwanted Emissions Outside the Operating Range; RF Carrier Frequency Stability; Spectrum at Amplifier Power Output; Ratio Measurement (Co + No)/No Using Spectrum Analyzer; Spectrum Emission.	ANATEL Act n° 941, February 8, 2018
MODEM FOR DIGITAL TRANSCEIVER (BELOW OF 1GHz)	Maximum Transmission Power; Spectrum RF Mask; Discrete Spectrum Lines; Spurious Emissions from the Transmitter; Maximum Frequency Tolerance; Dynamic Reception Range; Sensitivity to Adjacent Channel Interference; Sensitivity to Co-channel Interference; CW Spurious Interference; Error Rate Due to a Function of Signal Level Received (NSR) and Residual Error Rate; Spurious Emissions from the receiver; Image frequency rejection.	ANATEL Act n° 946, February 8, 2018. ANATEL Act n° 8385, May 3, 2017.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 34

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
MODEM FOR DIGITAL TRANSCEIVER (ABOVE 1 GHz)	Maximum Transmission Power and Transmission Power Tolerance; Automatic Transmission Power Control (CAPT); RF Spectrum Mask; Discrete Spectrum Lines; Spurious Emissions from the Transmitter; Maximum Frequency Tolerance; Sensitivity to Adjacent Channel Interference – Degradation in the NSR; CW Spurious Interference; Sensitivity to interference of the Adjacent Channel - TEB Degradation; Sensitivity to CO-channel Interference - NSR Degradation; Sensitivity to CO-channel Interference - Degradation of TEB; Error rate due to a function of signal level received (NSR) and residual error rate.	ANATEL Act n° 934, February 8, 2018. ANATEL Act n° 8385, May 3, 2017.
DIGITAL MODULATOR	Power Spectral Density at the Modulator Output; Modem Performance Operating in Intermediate Frequency Loop (FI); Modem Performance Operating in Intermediate frequency Loop (FI) in the Presence of Interference from Adjacent Channels; Performance Of Transceivers Operating In Radio Frequency Loop (RF); Spurious Emissions in the Operating Frequency Range; Unwanted Emissions Outside the Operating Range; RF Carrier Frequency Stability Spectrum at Amplifier Power Output; Ratio Measurement (Co + No)/No Using Spectrum Analyzer; Spectrum Emission.	ANATEL Act n° 941, February 08, 2018.
INTERNAL SIGNAL REINFORCER	RF output Power ; RF Spectrum output; Frequency Stability; Conducted Spurious Emissions; Radiated Spurious Emissions.	ANATEL Act n° 944, February 08, 2018.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 35

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
RADIO FREQUENCY REPEATER	RF Output Power; RF Spectrum Output; Frequency Stability; Conducted Spurious Emissions.	ANATEL Act nº 944, February 08, 2018.
	RF spectrum mask; Discrete Spectrum Lines; Spurious Emissions from the Transmitter; Maximum Frequency Tolerance; Dynamic Reception Range; Sensitivity to Adjacent Channel Interference; Sensitivity to Co-channel Interference; CW Spurious Interference; Error rate due to a function of signal level received (NSR) and residual error rate; Spurious Emissions from the Receiver; Image Frequency Rejection.	ANATEL Act nº 946, February 08, 2018.
RADIO FREQUENCY REPEATER	LTE Technology Transmission Power; Frequency Stability; Out of Band Gain; Operating Band Unwanted Emissions; Spurious Emissions; Adjacent Channel Rejection Ratio.	3GPP TS 36.143 V9.2.0 / V14.0.0 Items: 6; 7; 8; 9.1.5.2; 9.2.5.2;13
MOBILE PHONE	TDMA Technology: Radiated Spurious Emission (receptor); Frequency Stability; Digital RF Power Output; Spectrum Noise Suppression- broadband; Conducted Spurious and Harmonics Emission; Radiated Spurious Emission (transmitter).	TIA / EIA / IS-137-A; Item 2.5 and ANSI C63.4. Items 3.1.2.2; 3.2.1.2; 3.4.1.2; 3.4.2.2; 4.4.3
	Frequency Stability; Conducted Spurious Emission - conduzidas; Radiated Spurious Emission.	

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 36

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
MOBILE PHONE (Cont.)	CDMA Technology: Radiated Spurious Emission (receptor); Frequency Accuracy; Range of Open Loop Output; Maximum RF Output Power; Minimum Controlled Output Power; Conducted Spurious Emissions; Radiated Spurious Emissions (transmitter).	TIA / EIA-98-C Items 3.5.2; 4.1.1; 4.4.1; 4.4.5; 4.4.6; 4.5.1; 4.5.2
	CDMA 2000 Technology: Frequency Accuracy; Range of Open Loop Output Power Maximum RF Output Power; Conducted Spurious Emission.	3GPP2 C.50011-A. Items 4.1; 4.4.1; 4.4.5; 4.5.1
	GSM Technology - GSM 850, GSM 900, DCS 1800 and PCS 1900: Conducted Spurious Emission - Communication Terminal; Conducted Spurious Emission - Inactive Terminal; Radiated Spurious Emission Frequency and Phase Error; Transmitter Output Power, Power Control and Burst Time	GSM - 3GPP TS 51.010-1 V6.5.0 / V7.8.0 / V8.4.0 / V13.3.0 Items 12.1.1; 12.1.2; 12.2; 13.1; 13.3
	GSM/GPRS Technology– GSM 850, GSM 900, DCS 1800 e PCS 1900: Conducted Spurious Emission - Terminal in communication; Conducted Spurious Emission - Inactive Terminal; Radiated Spurious Emission; Frequency and Phase Error in the GPRS Multislot Configuration; Transmitter Output Power in GPRS Multislot Configuration.	GSM - 3GPP TS 51.010-1 V6.5.0 / V7.8.0 / V8.4.0 / V13.3.0 Items 12.1.1; 12.1.2; 12.2; 13.16.1; 13.16.2

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 37

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
MOBILE PHONE (Cont.)	<u>GSM / EDGE Technology - GSM 850, GSM 900, DCS 1800 and PCS1900:</u> Conducted Spurious Emission - Terminal in Communication; Conducted Spurious Emission - Inactive Terminal Communication; Radiated Spurious Emission; Frequency Error and Modulation Accuracy in the EGPRS Configuration; Transmitter Output Power in the EGPRS Configuration.	GSM - 3GPP TS 51.010-1 V6.5.0 / V7.8.0 / V8.4.0 / V13.3.0 Items 12.1.1; 12.1.2; 12.2; 13.17.1; 13.17.3
	<u>WCDMA / HSDPA / HSUPA Technology</u> Maximum Output Power; Maximum Output Power with HS-DPCCH; Maximum Output Power with HS-DPCCH and E-DCH; UE Relative Code Domain Power Accuracy; UE Relative Code Domain Power Accuracy for HS-DPCCH and E-DCH; Frequency Error; Open Loop Power Control in the Uplink; Inner Loop Power Control in the Uplink; Minimum Output Power; Power Emitted with the Transmitter Turned Off; Transmitter Temporal Mask; Power Setting in Uplink Compressed Mode; HS-DPCCH Power Control; Spectrum Emission Mask; Spectrum Emission Mask with HS-DPCCH; Spectrum Emission Mask with E-DCH; Conducted Spurious Emissions.	ETSI TS 134 121-1 V9.1.0 / 9.4.0 / V13.1.0 Items 5.2; 5.2AA; 5.2B; 5.2C; 5.2D; 5.3; 5.4.1; 5.4.2; 5.4.3; 5.5.1; 5.5.2; 5.7; 5.7 A; 5.9; 5.9A; 5.9B; 5.11; 5.13.1; 5.13.1.A; 5.13.1 AA; 5.13.2A; 5.13.2B.
	Error Vector Magnitude; Error Vector Magnitude with H-DPCCH; Error Vector Magnitude and Phase Discontinuity with HSDPCCH; Relative Code Domain Error with HS-DPCCH; Relative Code Domain Error with HS-DPCCH and E-DCH.	ETSI TS 134 121-1 V9.1.0 / 9.4.0 / V13.1.0 Items 5.2; 5.2AA; 5.2B; 5.2C; 5.2D; 5.3; 5.4.1; 5.4.2; 5.4.3; 5.5.1; 5.5.2; 5.7; 5.7 A; 5.9; 5.9A; 5.9B; 5.11; 5.13.1; 5.13.1.A; 5.13.1 AA; 5.13.2A; 5.13.2B.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 38

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
MOBILE PHONE (Cont.)	HSUPA+ Technology UE Relative Code Domain Power Accuracy for HS-DPCCH and E-DCH with 16QAM; EVM and IQ Origin Offset for HS-DPCCH and E-DCH with 16 QAM; Relative Code Domain Error for HS-DPCCH and E-DCH with 16QAM.	ETSI TS 134 121-1 V9.4.0 / V13.1.0 Items 5.2E; 5.13.1AAA; 5.13.2C
	LTE Technology: Maximum Output Power; Maximum Power Reduction; Configured UE Transmitted Output Power; Minimum Output Power; Transmission / Reception Time Mask; Frequency Stability; Error Vector Magnitude -EVM; Carrier Leakage; Operating Band Unwanted Emissions. Occupied Bandwidth; Spectrum Emission Mask; Adjacent Channel Leakage Power Ratio Conducted Spurious Emissions.	3GPP TS 36.521-1 V9.5.0 / V14.5.0 Items 6.2.2; 6.2.3; 6.2.5; 6.3.2; 6.3.4.1; 6.5.1; 6.5.2.1; 6.5.2.2; 6.5.2.3; 6.6.1; 6.6.2.1; 6.6.2.3; 6.6.3.1

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 39

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<p><u>INFORMATION TECHNOLOGY AND EQUIPMENT</u></p>	<p><u>ELECTRICAL AND MAGNETIC TESTS</u></p>	
<p>MOBILE PHONE (Cont.)</p>	<p>Nb-IoT LTE Cat. M1:</p> <p>UE Maximum Output Power for UE category M1; Maximum Power Reduction (MPR) for UE category M1; Additional Maximum Power Reduction (A-MPR) for UE category M1; Configured UE transmitted Output Power for UE category M1; Minimum Output Power for UE category M1; UE Transmit OFF power for UE category M1; ON/OFF time mask for UE category M1; Power Control for UE category M1; Frequency Error for UE category M1; Frequency Error for UE category M1 (CEmodeB); Error Vector Magnitude (EVM) for UE category M1; Carrier leakage for UE category M1; In-band emissions for non allocated RB for UE category M1; EVM equalizer spectrum flatness for UE category M1; Occupied bandwidth for UE category M1; Spectrum Emission Mask for UE category M1; Additional Spectrum Emission Mask for UE category M1; Adjacent Channel Leakage Power Ratio for UE category M1; Spurious emission for UE category M1; Transmit intermodulation for UE category M1; Reference sensitivity level for UE category M1; Maximum input level for UE category M1; Adjacent Channel Selectivity (ACS) for category M1; In-band blocking for UE category M1; Narrow band blocking for UE category M1; Wide band Intermodulation for UE category M1; Spurious emissions for UE category M1.</p>	<p>3GPP TS 36.521-1 1 Ver 14.4.0 ETSI TS 136 521-1 V14.4.0 6.2.2EA; 6.2.3EA; 6.2.4EA; 6.2.5EA; 6.3.2EA; 6.3.3EA; 6.3.4EA; 6.3.5EA; 6.5.1EA; 6.5.1EA_1; 6.5.2.1EA; 6.5.2.2EA; 6.5.2.3EA ; 6.5.2.4EA; 6.6.1EA; 6.6.2.1EA; 6.6.2.2EA; 6.6.2.3EA; 6.6.3EA; 6.7EA; 7.3EA; 7.4EA; 7.5EA; 7.6.1EA; 7.6.3EA; 7.8.1EA; 7.9EA</p>

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 40

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
MOBILE PHONE (Cont.)	Nb-IoT Cat. NB1 UE Maximum Output Power for UE category NB1; Maximum Power Reduction (MPR) for UE category NB1; Configured UE transmitted Output Power for UE category NB1; Minimum Output Power for UE category NB1; UE Transmit OFF power for UE category NB1; ON/OFF time mask for UE category NB1; Power Control for UE category NB1; Frequency Error for UE category NB1; Error Vector Magnitude (EVM) for UE category NB1; Carrier leakage for UE category NB1; In-band emissions for non allocated RB for UE category NB1; Occupied bandwidth for UE category NB1; Spectrum Emission Mask for UE category NB1; Adjacent Channel Leakage Power Ratio for UE category NB1; Spurious emission for UE category NB1; Transmit intermodulation for UE category NB1; Reference sensitivity level for UE category NB1; Maximum input level for UE category NB1; Adjacent Channel Selectivity (ACS) for category NB1; In-band blocking for UE category NB1; Wide band Intermodulation for UE category NB1.	3GPP TS 36.521-1 1 Ver 14.4.0 ETSI TS 136 521-1 V14.4.0 6.2.2F; 6.2.3F; 6.2.5F; 6.3.2F ; 6.3.3F ; 6.3.4F; 6.3.5F; 6.5.1F; 6.5.2.1F.1; 6.5.2.2F; 6.5.2.3F; 6.6.1F; 6.6.2.1F; 6.6.2.3F; 6.6.3F; 6.7F; 7.3F; 7.4F; 7.5F; 7.6.1F; 7.8.1F

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 41

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
TRONCALIZED ANALOG TRANSCEIVER - BASE	Maximum Transmission Power And Transmission Power Tolerance; RF Spectrum Mask; Transmitter Spurious and Harmonic Emissions; Frequency Stability; Transmitter Audio Response; Sensitivity; Spurious Rejection and Frequency Components Images; Selectivity Measure; Intermodulation Spurious Rejection; Receiver Audio Response; Harmonic Distortion; Fixed Noise or FM buzzing from the Transceiver.	ANATEL Act nº 943, February 08, 2018.
TRONCALIZED ANALOG TRANSCEIVER - MOBILE AND PORTABLE	Maximum Transmission Power and Transmission Power Tolerance; RF Spectrum Mask; Transmitter Spurious and Harmonic Frequency Stability; Transmitter Audio Response; Sensitivity; Spurious Rejection and Frequency Components Images; Selectivity Measure; Intermodulation Spurious Rejection; Receiver Audio Response; Harmonic Distortion; Fixed Noise or FM Buzzing from the Transceiver.	ANATEL Act nº 943, February 08, 2018.
TRONCALIZED DIGITAL TRANSCEIVER -BASE	RF Output Power; RF Output Spectrum; Frequency Stability; Conducted Spurious Emissions; Radiated Spurious Emissions.	ANATEL Act nº 944, February 08, 2018.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 42

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
DIGITAL TRANSCEIVER TRONCALIZED - MOBILE AND PORTABLE	Transmission Power; RF Spectrum; Spurious and Harmonics Level; Frequency Stability.	ANATEL Act n° 943, February 08, 2018.
SATELLITE FOR SMM TRANSCEIVER	Electrical Field Strength Radiated at Frequencies Below 1000 MHz; Unwanted Emissions Outside Operating Frequency Ranges for the Tterminals Mobile Access in the "Carrier-On" state; Operating band unwanted Emissions and Outside the Declared Bands for Mobile Access Terminals in the "Carrier-On" State; Unwanted Emissions to Mobile Access Terminals in the "Carrier Off" State; Power Density of Unwanted Emissions in the Frequency Range from 1559 MHz to 1605 MHz for Mobile Access Terminals On Board Aircraft in the "Carrier-On" State; Eirp Density Emissions in the Related Range; Electromagnetic Compatibility; Exposure Limits to Electric, Magnetic and Electromagnetic Fields.	ANATEL Act n° 940, February 08, 2018.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 43

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
TRANSCEIVER AND DIGITAL TRANSMITTER	Maximum Power and Transmission Power Tolerance; Maximum Frequency Tolerance; Automatic Transmission Power Control (ATPC); RF Spectrum Mask; Discrete Spectrum Lines; Transmitter Spurious Emissions; Frequency Response.	ANATEL Act nº 8385, May 03, 2017.
	Transmitter power tolerance; Transmitter power and frequency control; Radio Frequency (RF) spectrum mask; Discrete CW components exceeding the spectrum mask limit; Spurious emissions – external; Dynamic Change of Modulation Order; Radio frequency tolerance; Transmitter power and power tolerance; Transmitter power and frequency control; RF spectrum mask; Discrete CW components exceeding the spectrum mask limit; Unwanted emissions in the spurious domain – external; Dynamic Change of Modulation Order; Radio frequency tolerance; Unwanted emissions in the spurious domain – external; BER as a function of receiver input signal level (RSL); Receiver selectivity.	ETSI EN 302 217-2-2 V2.2.1 ETSI EN 302 217-2 V3.1.1 4.2.1.2; 4.2.2; 4.2.4; 4.2.5; 4.2.6; 4.2.7; 4.2.8; 5.2.1; 5.2.2; 5.2.3; 5.2.4; 5.2.5; 5.2.6; 5.2.7; 5.3.1; 5.3.2; 5.3.3

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 44

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
TRANSCEIVER AND DIGITAL TRANSMITTER (BELOW 1GHz)	Maximum Transmission Power; RF Spectrum Mask; Discrete Spectrum Lines; Transmitter Spurious Emissions; Maximum Frequency Tolerance; Dynamic Reception Range; Sensitivity to Adjacent Channel Interference; Sensitivity to Co-channel Interference; CW Spurious Interference; Error rate due to a function of signal level received (NSR) and residual error rate; Receiver Spurious Emission; Image Frequency Rejection.	ANATEL Act n° 946, February 08, 2018. ANATEL Act n° 8385, May 3, 2017.
TRANSCEIVER AND DIGITAL TRANSMITTER (ABOVE 1GHz)	Maximum Transmission Power and Transmission Power Tolerance Automatic Transmission power Control (ATPC); RF Spectrum Mask; Discrete Spectrum Lines; Transmitter Spurious Emissions; Maximum frequency Tolerance; Sensitivity to Adjacent Channel Interference – Degradation in NSR and TEB; Sensitivity to Interference Co-Channel - Degradation in NSR and TEB; CW Spurious Interference; Error rate due to a function of signal level received (NSR) and residual error rate.	ANATEL Act n°. 934, February 08, 2018 ANATEL Act n°. 8385, May 03, 2017.
FIXED, MOBILE AND PORTABLE TRANSCEIVER AND TRANSMITTER - AM	Transmission Power; Frequency Stability; Transmitter Spurious Level; Side Band Suppressed Attenuation with AM-SSB and AM-SSB / SC Modulation.	ANATEL Act No. 938, February 08, 2018.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 45

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
FIXED, MOBILE AND PORTABLE TRANSCEIVER AND TRANSMITTER - FM	Maximum Transmission Power and Transmission Power Tolerance; RF Spectrum Mask; Transmitter Spurious and Harmonic Emissions; Frequency Stability; Transmitter Audio Response; Sensitivity; Spurious Rejection and Frequency Components Images; Selectivity Measure; Intermodulation Spurious Rejection; Receiver Audio Response; Harmonic Distortion; Fixed Noise or FM Buzzing from the Transceiver.	ANATEL Act No. 943, February 08, 2018
RURAL SUBSCRIBER FIXED TRANSCEIVER (117 - 470 MHz)	Maximum Transmission Power and Transmission Power Tolerance; RF Spectrum Mask; Transmitter Spurious and Harmonic Emissions; Frequency Stability; Transmitter Audio Response; Sensitivity; Spurious Rejection and Frequency Components Images; Selectivity Measure; Intermodulation Spurious Rejection; Receiver Audio Response; Harmonic Distortion. Fixed Noise or FM Buzzing from the Transceiver	ANATEL Act nº 943, February 08, 2018.
RURAL BASE FIXED TRANSCEIVER	Maximum Transmission Power and Transmission Power Tolerance; RF Spectrum Mask; Transmitter Spurious and Harmonic Emissions; Frequency Stability; Transmitter Audio Response; Sensitivity; Spurious Rejection and Frequency Components Images; Selectivity Measure; Intermodulation Spurious Rejection; Receiver Audio Response; Harmonic Distortion. Fixed Noise or FM Buzzing from the Transceiver	ANATEL Act nº 943, February 08, 2018.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 46

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
INFORMATION TECHNOLOGY AND EQUIPMENT	ELECTRICAL AND MAGNETIC TESTS	
MOBILE SATELLITE TRANSCEIVER	Electric Field Intensity Radiated at Frequencies Below 1000 MHz; Unwanted Emissions Outside Operating Frequency Ranges for the Terminals Mobile access in the "Carrier-ON" state; Operating Band Unwanted Emissions and Outside the Declared Bands for Mobile Access Terminals in the "Carrier-On" State; Unwanted Emissions to Mobile Access Terminals in the "Carrier Off" State; Power Density of Unwanted Emissions in the Frequency Range from 1559 MHz to 1605 MHz for Mobile Access Terminals On Board Aircraft in the "Carrier-On" State; EIRP Density Emissions in the Declared Range; Electromagnetic Compatibility; Exposure Limits to Electric Fields; Magnetic and Electromagnetic.	ANATEL Act nº. 940, February 08, 2018
TRANSCEIVER FOR RADIO BASE STATION	RF Output Power; RF Output Spectrum; Spurious Emissions; Frequency Stability.	ANATEL Act nº. 944, February 08, 2018
	Base station output power NB-IoT RB power dynamic range for in-band or guard band operation Transmit ON/OFF power (TDD) Frequency error Occupied bandwidth Adjacent channel leakage power ratio (ACLR) Operating band unwanted emissions Transmitter spurious emissions Receiver spurious emissions	ETSI TS 136.141 v15.3.0 (2018-07) 3GPP TS 36.141 V9.8.0 / V14.3.0/15.3.0 Items 6.2; 6.3.3;6.4; 6.5.1; 6.6.1; 6.6.2; 6.6.3.5.2; 6.6.4.5.2; 7. 7
	Base station output power Transmit ON/OFF power Frequency Error Occupied Bandwidth Adjacent channel leakage power ratio (ACLR) Operating band unwanted emissions Transmitter spurious emissions Receiver spurious emissions	ETSI TS 138 141-1 V16.3.0 (2020-03) 3GPP TS 38.141-1 V16.3.0 (2020-03) 6.2; 6.4; 6.5.2; 6.6.2; 6.6.3; 6.6.4; 6.6.5; 7.6

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 47

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND MAGNETIC TESTS</u>	
TRANSCEIVER FOR RADIO BASE STATION (Cont.)	Base station maximum output power Transmit ON/OFF Power Frequency error Transmitter Spurious emissions Operating band unwanted emissions Occupied bandwidth Adjacent channel leakage power ratio (ACLR) Receiver spurious emissions	ETSI TS 137 141-1 V16.5.0 (2020-03) 3GPP TS 37.141 V16.5.0 (2020-03) 6.2.1; 6.4; 6.5.2; 6.6.1; 6.6.2; 6.6.3; 6.6.4; 7.6
TRANSCEIVER FOR GROUND STATION (NOT SMM)	Spectrum Power Density at the Modulator Output; Modem Performance Operating in Intermediate Frequency (FI) Loop; Modem Performance Operating in Intermediate Frequency (FI) loop in Presence of Interference from Adjacent Channels; Performance of Transceivers Operating in Radio Frequency (RF) Loop; Spurious Emissions in the Operating Frequency Range; Unwanted Emissions Outside the Operating Range; RF Carrier Frequency Stability; Spectrum at Amplifier Power Output; Ratio Measurement (Co + No) / No Using Spectrum Analyzer; Spectrum Emission.	ANATEL Act n°. 941, February 08, 2018.
TRANSCEIVER FOR AUTOMATIC SYSTEM TO SHIP IDENTIFICATION	Transmitter Spurious and Harmonic Emissions.	ANATEL Act n°. 943, February 08, 2018
LINK RADIO TRANSMITTER	Modulation - AM: Transmission Power; Frequency Stability; Spurious Level of Transmission; Side Band Suppressed Attenuation with Modulation AM-SSB and AM-SSB / SC.	ANATEL Act n°. 938, February 08, 2018

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 48

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
LINK RADIO TRANSMITTER (Cont.)	Modulation – FM: Maximum Transmission Power and Transmission Power Tolerance; RF Spectrum Mask; Transmitter Spurious and Harmonic Emissions; Frequency stability; Transmitter Audio Response; Sensitivity; Spurious Rejection and Frequency Components Images; Selectivity Measure; Intermodulation Spurious Rejection; Receiver Audio Response; Harmonic Distortion; Fixed Noise or FM Buzzing from the Transceiver.	ANATEL Act n°. 943, February 08, 2018
SUPERVISION AND CONTROL TRANSMITTER	Maximum Transmission Power and Transmission Power Tolerance; RF Spectrum Mask; Transmitter Spurious and Harmonic Emissions; Frequency Stability; Transmitter Audio response; Sensitivity; Spurious Rejection and Frequency Components Images; Selectivity Measure; Intermodulation Spurious Rejection; Receiver Audio Response; Harmonic Distortion; Fixed Noise or FM Buzzing from the Transceiver.	ANATEL Act n°. 943, February 8, 2018
	Transmission Power; Frequency Stability; Spurious Level of Transmission; Side Band Suppressed Attenuation with AM-SSB and AM-SSB / SC Modulation.	ANATEL Act n°. 938, February 08, 2018.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 49

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
NETWORK INTERCONNECTION EQUIPMENT	When E1 Interface: Binary Digits Speed; Digital Sign; Output Characteristics; Symmetrical linterface; Input Characteristics; Return Loss; Gateway; Jitter at 2,048 kbit / s Output; Jitter Transfer Function; Binary Digits Speed Digital Sign; Output Characteristics; Jitter Generation; Input Characteristics; Jitter Acceptance.	ANATEL Act n°. 14473, December 5, 2017
	Return Loss.	ANATEL Act n° 14473, December 5, 2017
	When E3 Interface Observation of Alarm Indication; Priorities; Failure Conditions; Signal Alarm Indication - SAI; Stipulated Delay.	ANATEL Act n° 14473, December 5, 2017
	When STM -1, 4, 16 e 64 Interface STM-1 Electrical Interface Pulse Format; STM-1 Electrical Interface Jitter Tolerance; Tolerance to Input Frequency Variation; Optical STM-N; Wave-length; Spectrum Width; Transmitted Optical Power.	ANATEL Act n° 14473, December 5, 2017 ANATEL Act n° 14665, December 12, 2017.

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 50

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
NETWORK INTERCONNECTION EQUIPMENT(Cont.)	Extinction Ratio; Eye Diagram Mask at Point S; Receiver Sensitivity; Receiver Saturation Power; Return Loss; Automatic Laser Shutdown (ALS) Operation; Max. Dispersion Permissible Between Points S and R; Jitter Measures; Timing; References Automatic switching; References Manual switching; Clock Output Frequency.	ANATEL Act n° 14473, December 05, 2017 ANATEL Act n° 14665, December 12, 2017
	Alarms; Signal Loss Alarms; Signal Alarm indication (SAI); Signs Indicating Alarms on the Remote Equipment; Synchronization Alarms.	ANATEL Act n° 14473, December 05, 2017 ANATEL Act n° 14665, December 12, 2017
	Applicable Tests to CT-103 and CT-104 Signals; CT-114 and CT-115 Signals (Generator / Receiver).	ANATEL Act n° 14473, December 05, 2017
	Applicable Tests for Product Operating at Data Transmission Rates up to 20 kbit / s and Having CT-105, CT-106, CT-107 and CT-109 Signals (Generator / Load).	ANATEL Act n° 14473, December 05, 2017
	Applicable Tests for Product Operating at Data Transmission Rates up to 100 kbit / s and Having CT-105, CT-106, CT-107 and CT-109 Signals (Generator / Load).	ANATEL Act n° 14473, December 05, 2017
	Applicable Tests for Product Operating at Data Transmission Rates up to 10 Mbit / s and Having CT-105, CT-106, CT-107 and CT-109 Signals (Generator / Load).	ANATEL Act n° 14473, December 05, 2017
	Electrical Characteristics of the V.36 Interface.	ANATEL Act n° 14473, December 05, 2017

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 51

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS)	Output Longitudinal Voltage.	Technical Requirements and Testing Procedures Applicable to Products Certification for Telecommunication Category I - ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS) (2014).
	Longitudinal Balancing.	Technical Requirements and Testing Procedures Applicable to Products Certification for Telecommunication Category I - ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS) (2014).
	Power Spectral Density (G. dmt mode).	ITU-T G.992.1 (1999), Annex A, Items A.1.2 and A.2.4.
	Performance (G. dmt mode).	ITU-T G.992.1 (1999), Annex G, Item G.1. Technical Requirements and Testing Procedures Applicable to Products Certification for Telecommunication Category I - ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS) (2014).
	Power Spectral Density (G. lite mode)	ITU-T G.992.2 (1999), Annex A, Items A.1 and Annex B, Items B1 and B2.
	Performance (G. Lite mode).	ITU-T G.992.2 (19/99), Annex E, Item E.1. Technical Requirements and Testing Procedures Applicable to Products Certification for Telecommunication Category I - ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS) (2014).

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 52

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS) (Cont.)	Performance (T1.413 mode).	ANSI Standard T1.413 Emission 2 Technical Requirements and Testing Procedures Applicable to Products Certification for Telecommunication Category I - ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS) (2014).
	Output Longitudinal Voltage (ADSL2 mode); Longitudinal Balancing (ADSL2 mode); Input Resistance (ADSL2 mode); Input Impedance (ADSL2 mode).	Technical Requirements and Testing Procedures Applicable to Products Certification for Telecommunication Category I - ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS) (2014).
	Power Density	ITU-T G.992.1 (1999), Annex A, Figures A-1 and A-3. Technical Requirements and Testing Procedures Applicable to Products Certification for Telecommunication Category I - ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS) (2014).
	Output Longitudinal Voltage (ADSL2 + mode); Longitudinal Balancing (ADSL2 + mode); Input Resistance (ADSL2 + mode); Input Impedance (ADSL2 + mode).	Technical Requirements and Testing Procedures Applicable to Products Certification for Telecommunication Category I - ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS) (2014).
	Power Spectral Density	ITU-T G.992.5 (2005), Annex A, Figures A-1 and A-3. Technical Requirements and Testing Procedures Applicable to Products Certification for Telecommunication Category I - ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS) (2014).
	POTS Pass Band Loss Requirements (on-hook)	ETSI TS 101 952-1 V1.1.1 (2009) Item 6.4
	POTS Pass Band Insertion Loss (off-hook)	ETSI TS 101 952-1 V1.1.1 (2009) Item 6.5.1
	POTS Pass Band Insertion Loss Distortion (off-hook)	ETSI TS 101 952-1 V1.1.1 (2009) Item 6.5.2

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 53

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
ADSL DIGITAL MODEM (FOR ATU-R AND ATU-C MODEMS) (Cont.)	POTS Pass Band Return Loss Requirements, Option B (off-hook)	ETSI TS 101 952-1 V1.1.1 (2009) Item 6.6.2
	xDSL Band On-Hook Isolation Between LINE and POTS port	ETSI TS 101 952-1 V1.1.1 (2009) Item 6.9.1
	xDSL Band Off-Hook Isolation Between LINE and POTS port	ETSI TS 101 952-1 V1.1.1 (2009) Item 6.9.2
	xDSL Signal Loss: IL LINE Port to xDSL port	ETSI TS 101 952-1 V1.1.1 (2009) Item 6.9.4
	High Pass Alternatives A and B	ETSI TS 101 952-1 V1.1.1 (2009) Item 6.9.4.1
OLT - OPTICAL LINE TERMINATION ONT - OPTICAL NETWORK TERMINATION ONU - OPTICAL NETWORK UNIT	Font Type	ITU-T G.984.2 (2003), Item 8.2.6.1
	Optical Source Spectral Characteristics	ITU-T G.984.2 (2003), Item 8.2.6.2
	Mean Launched Power	ITU-T G.984.2 (2003), Item 8.2.6.3 ITU-T G.984.2 Amendment 1 (2006) - Table III.1 ITU-T G, 984.2 Amendment 2 (2008) - Table V.1
	Launched Optical Power without Input to the Transmitter	ITU-T G.984.2 (2003), Item 8.2.6.3.1
	Extinction Ratio	ITU-T G.984.2 (2003), Item 8.2.6.4
	Maximum Transmitter Reflectance	ITU-T G.984.2 (2003), Item 8.2.6.5
	Eye Diagram	ITU-T G.984.2 (2003), Item 8.2.6.6
	Tolerance to the Reflected Optical Power	ITU-T G.984.2 (2003), Item 8.2.6.7
	Minimum Sensitivity	ITU-T G.984.2 (2003), Item 8.2.8.1 ITU-T G.984.2 Amendment 1 (2006) - Table III.1 ITU-T G, 984.2 Amendment 2 (2008) - Table V.1

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 54

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
INFORMATION TECHNOLOGY AND EQUIPMENT	ELECTRICAL AND OPTICAL TESTS	
OLT - OPTICAL LINE TERMINATION ONT - OPTICAL NETWORK TERMINATION ONU - OPTICAL NETWORK UNIT (Cont.)	Maximum overload - saturation	ITU-T G.984.2 (2003), Item 8.2.8.2 ITU-T G.984.2 Amendment 1 (2006) - Table III.1 ITU-T G, 984.2 Amendment 2 (03/2008) - Table V.1
	Maximum optical path penalty	ITU-T G.984.2 (2003), Item 8.2.8.3 ITU-T G.984.2 Amendment 1 (2006) - Table III.1 ITU-T G, 984.2 Amendment 2 (2008) - Table V.1
	Maximum reflectance of receiver equipment	ITU-T G.984.2 (2003), Item 8.2.8.6
	Tolerance to reflected optical power	ITU-T G.984.2 (2003), Item 8.2.8.11
	Optical protection	IEC 825-1
	Climatic tests for GPON equipment (ONU) intended to outside installations to user environment.	ANATEL Act nº. 14098, November 23, 2017
MULTIPLEX OPTICAL WDM/CWDM/ DWDM	Classification according to ITU Recommendation G.692; Requirement for optical parameter measurements; Verification of optical frequencies deviation of the channels in relation to the ITU grid; Verification of the flaw deviation of the optical powers of the channels; Requirement of measurements of systemic parameters; Checking of the maximum and minimum power at the transponder inputs; Error rate measurement; Checking of the Safety Requirements for optical Equipment (ITU-664).	Rec. G.692 of the ITU-T; Rec. G.959.1 of the ITU-T; Rec. G.957 of the ITU-T; Rec. G.691 of the ITU-T; GR-1312-CORE (Telcordia); Rec. G.664 of the ITU-T; GR-2979-CORE (Telcordia); Rec. G.694.2 of the ITU-T; Rec. G.695 of the ITU-T.
MULTIPLEX PDH (2 Mbit/s)	Electrical characteristics of the digital interface at 2,048 kbit / s. Electrical and transmission characteristics for the 2-wire channel; Output characteristics for symmetric pair interface Transmitted signal Power.	ANATEL Act nº. 14033, November 22, 2017
	Electrical characteristics of the 64 kbit/s interface.	ANATEL Act nº. 14033, November 22, 2017
	Applicable tests to CT-103 and CT-104 signals, CT-114 and CT-115 signals (Generator / Receiver).	ANATEL Act nº. 14033, November 22, 2017

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 55

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
MULTIPLEX PDH (2 Mbit/s) (Cont.)	Applicable tests for product operating at data transmission rates up to 20 kbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act n°. 14033, November 22, 2017
	Applicable tests for product operating at data transmission rates up to 100 kbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act n°. 14033, November 22, 2017
	Applicable tests for product operating at data transmission rates up to 10 Mbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act n°. 14033, November 22, 2017
	Electrical characteristics of the V.36 interface.	ANATEL Act n°. 14033, November 22, 2017
	U Interface - Basic Access Unbalance to ground ratio Power Requirements for TR1; Supply Voltage of TR1. Line code; Power Spectral density; Transmission / reception termination.	ANATEL Act n°. 14033, November 22, 2017
	Performance Tests	ANATEL Act n°. 14033, November 22, 2017
	S / T Interface - Basic Access Echo response to D channel; Activation / Deactivation; Frame rate transmitting INFO 1; Jitter characteristics; Output impedance transmitting binary 0; Pulse amplitude and shape; Voltage in other loads; Input Impedance; Unbalance; Power consumed; Power consumed in restricted mode.	ANATEL Act n°. 14033, November 22, 2017
	S / T Interface - Primary Access Electrical Characteristics ; Jitter (S / T interface); Power supply.	ANATEL Act n°. 14033, November 22, 2017

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 56

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
MULTIPLEX PDH (34 Mbit/s)	Electrical characteristics of the digital interface at 34,368 kbit / s; Electrical and transmission characteristics for the 2-wire channel; Transmitted signal power; Performance without using the type 3 line; Longitudinal output voltage; Umbalance Degree.	ANATEL Act n°. 14033, November 22, 2017
	Applicable test to CT-103 and CT-104 signals, CT-114 and CT-115 signals (Generator / Receiver).	ANATEL Act n°. 14033, November 22, 2017
	Applicable tests for product operating at data transmission rates up to 20 kbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act n°. 14033, November 22, 2017
	Applicable tests for product operating at data transmission rates up to 100 kbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act n°. 14033, November 22, 2017
	Applicable tests for product operating at data transmission rates up to 10 Mbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act n°. 14033, November 22, 2017
	Electrical characteristics of the V.36 interface.	ANATEL Act n°. 14033, November 22, 2017
	U Interface - Basic Access: Unbalance to ground ratio; Power Requirements for TR1; Supply Voltage of TR1; Line code; Power Spectral density; Transmission / reception termination.	ANATEL Act n°. 14033, November 22, 2017
	Performance Tests.	ANATEL Act n°. 14033, November 22, 2017

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 57

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
MULTIPLEX PDH (34 Mbit/s) (Cont.)	S / T Interface - Basic Access Echo response to D channel; Activation / Deactivation; Frame rate transmitting INFO 1; Jitter characteristics; Output impedance transmitting binary 0; Pulse amplitude and shape; Voltage in other loads; Input Impedance; Unbalance; Consumed power; Power consumed in restricted mode.	ANATEL Act n°. 14033, November 22, 2017
	U Interface - Primary Access Electrical characteristics interface at 2048 kbit/s U Interface - Primary Access Output characteristics for symmetric pair interface	ANATEL Act n°. 14033, November 22, 2017
	S / T Interface - Primary Access Electrical characteristics; Jitter; Power supply.	ANATEL Act n°. 14033, November 22, 2017
MULTIPLEX SDH (STM-1, 4, 16 AND 64) ELECTRIC / OPTICAL	Electrical interface: Interface pulse format 2,048 kbit / s; Interface jitter tolerance 2,048 kbit / s; 2M asynchronous mapping of the 2,048 kbit / s interface; Interface pulse format 34,368 kbit / s; Jitter tolerance of the interface 34,368 kbit / s; 34M asynchronous mapping of the 34,368 kbit / s interface ; Interface pulse format 139,264 kbit / s; Jitter tolerance of the interface 139,264 kbit / s; 140M asynchronous mapping of the 139.264 kbit / s interface; Pulse format of the STM-1 Electrical interface; Jitter tolerance of the STM-1 Electrical interface.	ANATEL Act n°. 14665, December 12, 2017

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 58

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
MULTIPLEX SDH (STM-1, 4, 16 AND 64) ELECTRIC / OPTICAL (Cont.)	Optical interface: Frequency variation tolerance at the optical STM-N input; Wavelength; Spectral width; Transmitted optical power; Extinction Ratio; Eye diagram mask at point S; Receiver sensitivity; Receiver Saturation power; Return loss; Automatic laser shutdown (ALS) operation; Maximum permissible dispersion between points S and R; Jitter Measures.	ANATEL Act nº. 14665, December 12, 2017
	Timing: Reference Automatic switching; Reference Manual control switching; Clock output frequency; Alarms; Signal loss alarms; Signal Alarm indication (SAI); Signs indicating alarms on the remote equipment; Synchronization Alarms.	ANATEL Act nº. 14665, December 12, 2017
DATA MULTIPLEXER	Electrical and transmission characteristics for the 2-wire channel. Symmetrical interface (120 ohms); Electrical characteristics of the interface at 64 kbit / s; Applicable tests to CT-103 and CT-104 signals, CT-114 and CT-115 signals (Generator / Receiver).	ANATEL Act nº. 14570, December 07, 2017
	Applicable tests for product operating at data transmission rates up to 20 kbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act nº 14570, December 07, 2017
	Applicable tests for product operating at data transmission rates up to 100 kbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act nº. 14570, December 07, 2017

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 59

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
DATA MULTIPLEXER (Cont.)	Applicable tests for product operating at data transmission rates up to 10 Mbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act n°. 14570, December 07, 2017
	Electrical characteristics of the V.36 interface.	ANATEL Act n°. 14570, December 07, 2017
MULTISERVICE PLATFORM	When E1 interface Binary digits Speed; Digital signal; Output characteristics; Symmetric interface; Input characteristics; Return loss; Gateway; Jitter at 2,048 kbit / s output; Jitter transfer function.	ANATEL Act n°. 14655, December 12, 2017
	When E3 interface Binary digits Speed; Digital signal; Output characteristics; Jitter Generation; Input characteristics; Jitter Acceptance; Return loss.	ANATEL Act n°. 14655, December 12, 2017
	When STM-1, 4, 16 and 64 Interface STM-1 Electrical interface Pulse Format; STM-1 Electrical Interface Jitter Tolerance; Tolerance to Input frequency variation; Optical STM-N; Wavelength; Spectral Width.	ANATEL Act n°. 14655, December 12, 2017

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 60

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
MULTISERVICE PLATFORM (Cont.)	Transmitted optical power; Extinction Ratio; Eye diagram mask at point S; Receiver sensitivity; Receiver Saturation power; Return loss; Automatic laser shutdown (ALS) operation; Max. Dispersion permissible between points S and R; Jitter measures; Timing; References Automatic switching; References Manual control switching ; Clock output frequency; Alarms; Signal loss alarms; Signal Alarm lindication (SAI); Signals indicating alarms on the remote equipment; Synchronization Alarms.	ANATEL Act nº. 14655, December 12, 2017
	Applicable test to CT-103 and CT-104 signals, CT-114 and CT-115 signals (Generator / Receiver).	ANATEL Act nº. 14655, December 12, 2017
	Applicable tests for product operating at data transmission rates up to 20 kbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act nº. 14655, December 12, 2017
	Applicable tests for product operating at data transmission rates up to 100 kbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act nº. 14655, December 12, 2017
	Applicable tests for product operating at data transmission rates up to 10 Mbit /s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act nº. 14655, December 12, 2017
	Electrical characteristics of the V.36 interface.	ANATEL Act nº. 14655, December 12, 2017

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 61

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
MULTISERVICE PLATFORM (Cont.)	Classification according to ITU G.692 (WDM) Recommendation; Optical parameter measurements (WDM) requirement; Verification of the deviation of optical frequency of channels in relation to the ITU grid (WDM); Checking the temporal deviation of the optical powers of the channels (WDM); Requirement measurements of systemic parameters; (WDM); Verification of maximum and minimum power at the transponder inputs (WDM); Error rate measurement (WDM); Verification of safety requirements for optical equipment (ITU-664) (WDM).	ANATEL Act n°. 14655, December 12, 2017
DATA NETWORK EQUIPMENT	Binary Digits Speed; Digital Signal; Output characteristics; Symmetrical Interface; Input Characteristics; Return loss; Gateway; Jitter at 2,048 kbit /s output; Jitter transfer function.	ANATEL Act n° 14468, December 05, 2017
	Applicable tests to CT-103 and CT-104 signals, CT-114 and CT-115 signals (Generator / Receiver).	ANATEL Act n° 14468, December 05, 2017
	Applicable tests for product operating at data transmission rates up to 20 kbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act n° 14468, December 05, 2017
	Applicable tests for product operating at data transmission rates up to 100 kbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act n° 14468, December 5, 2017
	Applicable tests for product operating at data transmission rates up to 10 Mbit / s and having CT-105, CT-106, CT-107 and CT-109 signals (Generator / Load).	ANATEL Act n° 14468, December 5, 2017
	Electrical Characteristics of the V.36 interface.	ANATEL Act n° 14468, December 05, 2017

SCOPE OF ACCREDITATION- ABNT NBR ISO/IEC 17025 – TEST

Source Standard: NIT-DICLA-016

Sheet: 62

ACCREDITATION N°	TYPE OF INSTALATION	
CRL 0290	PERMANENT INSTALLATION	
ACTIVITY AREA / PRODUCTS TESTED	TEST CLASSE / TEST DESCRIPTION	STANDARD /SPECIFICATION METHOD
<u>INFORMATION TECHNOLOGY AND EQUIPMENT</u>	<u>ELECTRICAL AND OPTICAL TESTS</u>	
OPTICAL LINE TERMINAL	Systemic Tests; BER; Optical characteristics; Wavelength; Wavelength Stability; Spectral Width Stability; Power Stability; Optical Extinction Ratio; Electrical Extinction Ratio.	ANATEL Act nº 14747, December 15, 2017
	Performance.	ANATEL Act nº 14747, December 15, 2017
	Electrical characteristics of the interface at 64 kbit / s.	ANATEL Act nº 14747, December 15, 2017
	Electrical characteristics of the V.35 interface.	ANATEL Act nº 14747, December 15, 2017
OPTICAL LINE TERMINAL WITH INTEGRATED MULTIPLEX	Systemic Tests; BER; Optical characteristics; Wavelength; Wavelength Stability; Spectral Width Stability; Power Stability; Optical Extinction Ratio.	ANATEL Act nº 14747, December 15, 2017
	Performance.	ANATEL Act nº 14747, December 15, 2017
	Electrical characteristics of the interface at 64 kbit / s.	ANATEL Act nº 14747, December 15, 2017
	Electrical characteristics of the V.35 interface.	ANATEL Act nº 14747, December 15, 2017
	Electrical interface of the Integrated Multiplexer.	ANATEL Act nº 14747, December 15, 2017
X-X-X-X-X-X	X-X-X-X-X-X	X-X-X-X-X-X