
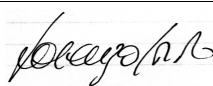





Test Report issued under the responsibility of:



TEST REPORT	
IEC 62368-1	
Audio/video, information and communication technology equipment	
Part 1: Safety requirements	
Report Number	E165880-A63-CB-2
Date of issue	2017-09-07
Total number of pages	110
Applicant's name	DIGI International
Address	11001 Bren Rd E, Minnetonka MN 55343-4410 U.S.A.
Test specification:	
Standard	IEC 62368-1:2014 (Second Edition)
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No.	IEC62368-1_1B
Test Report Form(s) Originator	UL(US)
Master TRF	2014-03
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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.	
General disclaimer:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test Item description		Router - Digi TransPort	
Trade Mark			
Manufacturer		DIGI International 11001 Bren Rd E Minnetonka MN 55343-4410 United States	
Model/Type reference		WR31-XX2A-DYY-ZZ, (where "X", "Y", and "Z" may be any alpha numeric character)	
Ratings		Electrical ratings not required (not for direct connection to the mains supply). Supplied by SELV, LPS or Class 2.	
Testing procedure and testing location:			
<input checked="" type="checkbox"/>	CB Testing Laboratory:	UL Northbrook	
Testing location/ address		333 Pfungsten Road, Northbrook, IL 60062 U.S.A.	
<input type="checkbox"/>	Associated CB Testing Laboratory:		
Testing location/ address			
Tested by (name + signature)		Lorenzo Iorio / Project Handler	
Approved by (name + signature)		Lucio Cinelli / Project Reviewer	
<input type="checkbox"/>	Testing procedure: TMP/CTF Stage 1		
Testing location/ address			
Tested by (name + signature)			
Approved by (name + signature)			
<input type="checkbox"/>	Testing procedure: WMT/CTF Stage 2		
Testing location/ address			
Tested by (name + signature)			
Witnessed by (name + signature)			
Approved by (name + signature)			
<input type="checkbox"/>	Testing procedure: SMT/CTF Stage 3 or 4		
Testing location/ address			
Tested by (name + signature)			
Approved by (name + signature)			
Supervised by (name + signature)			

List of Attachments (including a total number of pages in each attachment):

See E165880-A63-CB-2 CBTR

- National differences of IEC 62368-1 (11 pages)
- Enclosures (e.g., Photos 08; Diagrams 06; Manual 01; Schematics 03; Miscellaneous 06) (46 Total Pages)
- Miscellaneous Includes Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02 (1 page)

Summary of testing:**Tests performed (name of test and test clause):**

B.2.5 Input Test: Single Phase (**1.6.2)
 F.3.8 Durability of Marking Test (**1.7.11)
 8.7 Loading Test – Wall and Ceiling Mounted Equipment. (**4.2.10)
 5.4.1.5, 9.4.1.2 Heating Test [**4.5.1, 1.4.12, 1.4.13],

(**These are the test names and clauses from UL/IEC 60950-1, Second Edition.)

Testing location:

UL Northbrook, 333 Pfingsten Road, Northbrook, IL 60062 U.S.A.

Summary of compliance with National Differences:**List of countries addressed**

CANADA, DENMARK, FINLAND, GERMANY, IRELAND, ITALY, NORWAY, SWEDEN, UNITED KINGDOM, UNITED STATES, CENELEC common modifications EN

(See appended attachment NATIONAL DIFFERENCES)

The product fulfils the requirements of EN 62368-1:2014

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



TEST ITEM PARTICULARS:	
Classification of use by	<input type="checkbox"/> Ordinary person <input checked="" type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection	<input type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input checked="" type="checkbox"/> External Circuit - not Mains connected - <input checked="" type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance	<input type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input checked="" type="checkbox"/> None
Supply Connection – Type	<input type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> mating connector <input type="checkbox"/> other:_____
Considered current rating of protective device as part of building or equipment installation	N/A; Installation location: <input type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility.....	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: Not directly connected to mains
Class of equipment	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III
Access location	<input checked="" type="checkbox"/> restricted access location <input type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient:	74°C
IP protection class	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP____
Power Systems	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V _{LL}
Altitude during operation (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg)	<input checked="" type="checkbox"/> 0.75 kg
POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement.....	F (Fail)

TESTING:	See CBTR E165880-A63-CB-1, E165880-A63-CB-2
Date of receipt of test item	2015-09-11, 2015-10-21, 2017-04-28, 2017-06-27
Date (s) of performance of tests	2015-10-23, 2015-10-26, 2017-04-28, 2017-08-08
GENERAL REMARKS:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)	SVI PUBLIC CO LTD 141 - 142 MOO 5 TIVANON RD BANGKADI PATHUMTHANI 12000 THAILAND RIVERSIDE ELECTRONICS LTD 1 RIVERSIDE DR LEWISTON MN 55952-1461 UNITED STATES DIGI INTERNATIONAL INC 10000 W 76TH ST EDEN PRAIRIE MN 55344-3728 UNITED STATES MASTERWORK ELECTRONICS INC PARQUE INDUSTRIAL CALAFIA AVE EUCALIPTO 2398 MEXICALI BC MEXICO
GENERAL PRODUCT INFORMATION:	
<p>Product Description – The products are Ethernet/RF Routers, utilized to convert Ethernet data into RF signals for wireless transmission and reception. The router is housed in aluminum and may be wall mounted or Din Rail mounted. The unit is wall mounted with the provided bracket and secured with two screws. The unit may be Din Rail for building-in with a customer provided din rail bracket.</p> <p>The product has been evaluated for Indoor use only and all connections to the product remain internal to the building. The unit is powered by SELV, Limited Power Source or Class 2.</p> <p>The unit has 2 SIM Slots, 2 Ethernet RJ-45 connectors, 1 RS-232/422/485 port, DB9 connector, 1 five pin screw down terminal block I/O connector, two antenna connectors and an external ground stud.</p>	
<p>Model Differences – All models are identical except for choice of wireless module. The "XX" in the model name may be any alphanumerical character to differentiate wireless module (for tracking purposes ONLY). The "YY" may be any alphanumerical character for marketing purposes ONLY. The "ZZ" may be any alphanumerical character representing shipping/packaging options, not safety related.</p>	
<p>Additional application considerations – (Considerations used to test a component or sub-assembly) –</p> <p>The unit is intended for building-in. The investigated Pollution Degree is: 2 Device does not employ lasers, lithium batteries or TNV circuits. The unit was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of 74°C. See Table 5.4.1. 5 for additional details. The product is intended to be powered from SELV, non-energy hazardous, limited power or Class 2 supply source per IEC 60950-1.</p>	

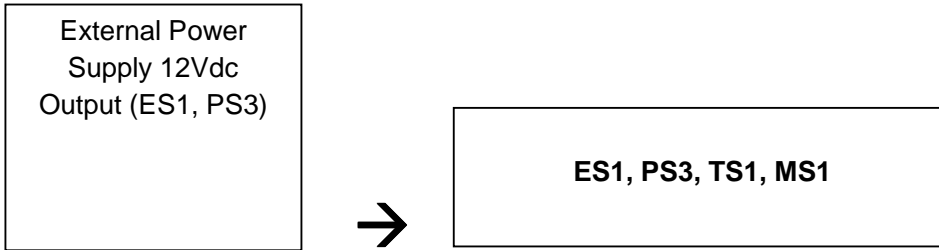
Under Project 4788098711.2, the original report was modified on to include the following changes/additions:
Update report to incorporate 62368-1 update consisting of revision of ambient temperature to 74C, addition of new wireless modules Sierra MC7455 and Cellient MPN200, revision to model nomenclature as well as deletion of the LR31 series models.

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worst case classification e.g. PS3, ES3.)	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input	
	ES1
Source of electrical energy	Corresponding classification (ES)
DC and low frequency sources	30Vdc maximum Input - ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts):	
	PS2
Source of power or PIS	Corresponding classification (PS)
Supply source	PS3
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component	
	Glycol
Source of hazardous substances	Corresponding chemical
N/A	N/A
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit	
	MS2
Source of kinetic/mechanical energy	Corresponding classification (MS)
EDGES	MS1
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure	
	TS1
Source of thermal energy	Corresponding classification (TS)

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
INTERNAL COMPONENTS	TS1
EXTERNAL SURFACE	TS1
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	Corresponding classification (RS)
N/A	N/A

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below
<input checked="" type="checkbox"/> ES <input checked="" type="checkbox"/> PS <input checked="" type="checkbox"/> MS <input checked="" type="checkbox"/> TS <input type="checkbox"/> RS

Equipment is supplied by PS3, ES1 see below



OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES1: input	--	--	--
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
fuel	PS3	6.3, no ignition for normal and abnormal operating conditions	6.4.6, metal enclosure	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1	--	--	--
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS2	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components		P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions	(See Annex F)	P
4.4.4	Safeguard robustness		N/A
4.4.4.2	Steady force tests	(See Annex T.4, T.5)	N/A
4.4.4.3	Drop tests.....	(See Annex T.7)	N/A
4.4.4.4	Impact tests.....	(See Annex T.6)	N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests	(See Annex T.3)	N/A
4.4.4.6	Glass Impact tests	(See Annex T.9, Annex U)	N/A
4.4.4.7.4	Thermoplastic material tests.....	(See Annex T.8)	N/A
4.4.4.8	Air comprising a safeguard	(See Annex T)	N/A
4.4.4.9	Accessibility and safeguard effectiveness		N/A
4.5	Explosion		N/A
4.6	Fixing of conductors		N/A
4.6.1	Fix conductors not to defeat a safeguard		N/A
4.6.2	10 N force test applied to		N/A
4.7	Equipment for direct insertion into mains socket - outlets		N/A
4.7.2	Mains plug part complies with the relevant standard		N/A
4.7.3	Torque (Nm).....		N/A
4.8	Products containing coin/button cell batteries		N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery		—
4.8.4	Battery Compartment Mechanical Tests.....	(See Table 4.8.4)	N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object	(See Annex P)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classifications.....:	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	ES1	P
5.2.2.2	Steady-state voltage and current.....:	See appended table 5.2)	P
5.2.2.3	Capacitance limits	(See appended table 5.2)	N/A
5.2.2.4	Single pulse limits.....:	(See appended table 5.2)	N/A
5.2.2.5	Limits for repetitive pulses	(See appended table 5.2)	N/A
5.2.2.6	Ringing signals	(See Annex H)	N/A
5.2.2.7	Audio signals	(See Clause E.1)	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards	No circuits above ES1.	P
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V		N/A
	b) Electric strength test potential (V)		N/A
	c) Air gap (mm)		N/A
5.3.2.4	Terminals for connecting stripped wire	No stripped wire	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		N/A
5.4.1.3	Humidity conditioning.....:	(See sub-clause 5.4.8)	N/A
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4) No insulation systems employed.	N/A
5.4.1.5	Pollution degree	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		N/A
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat softening temperature	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure	(See appended table 5.4.1.10.3)	N/A
5.4.2	Clearances		N/A
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.3	Determining clearance using required withstand voltage	(See appended table 5.4.2.3)	N/A
	a) a.c. mains transient voltage		—
	b) d.c. mains transient voltage		—
	c) external circuit transient voltage		—
	d) transient voltage determined by measurement ... :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2.4)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages		N/A
5.4.3	Creepage distances	(See appended table 5.4.3)	N/A
5.4.3.1	General		N/A
5.4.3.3	Material Group		—
5.4.4	Solid insulation		N/A
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	N/A
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs)		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material	(See appended Table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz.....	(See appended Table 5.4.4.9)	N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (M Ω)		—
5.4.6	Insulation of internal wire as part of supplementary safeguard	(See appended table 5.4.4.2)	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%)		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Temperature (°C)		—
	Duration (h)		—
5.4.9	Electric strength test	(See appended table 5.4.9)	N/A
5.4.9.1	Test procedure for a solid insulation type test		N/A
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits	(See appended table 5.4.9)	N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test.....	(See appended table 5.4.9)	N/A
5.4.10.2.3	Steady-state test.....	(See appended table 5.4.9)	N/A
5.4.11	Insulation between external circuits and earthed circuitry.....	(See appended table 5.4.9)	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V)		—
	Nominal voltage U_{peak} (V)		—
	Max increase due to variation U_{sp}		—
	Max increase due to ageing ΔU_{sa}		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$		—
5.5	Components as safeguards		
5.5.1	General		N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector	(See appended table 5.5.2.2)	N/A
5.5.3	Transformers	(See Annex G.5.3)	N/A
5.5.4	Optocouplers	(See sub-clause 5.4 or Annex G.12)	N/A
5.5.5	Relays	(See Annex G.2)	N/A
5.5.6	Resistors	(See Annex G.10)	N/A
5.5.7	SPD's	(See Annex G.8)	N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable	(See Annex G.10.3)	N/A
5.6	Protective conductor		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Color of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²)		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²).		—
	Protective current rating (A)		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm ²), nominal thread diameter (mm).....		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω)	(See appended table 5.6.6.2)	N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		
5.7.2	Measuring devices and networks		N/A
5.7.2.1	Measurement of touch current.....	(See appended table 5.7.4)	N/A
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	System of interconnected equipment (separate connections/single connection).....		—
	Multiple connections to mains (one connection at a time/simultaneous connections)		—
5.7.4	Earthed conductive accessible parts	(See appended Table 5.7.4)	N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V)		—
	Measured current (mA)		—
	Instructional Safeguard	(See F.4 and F.5)	N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA)		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA)		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2) Unit supplied by Limited power source or Class 2 per IEC 60950-1.	N/A
6.2.2.3	Power measurement for worst-case power source fault	(See appended table 6.2.2) Unit supplied by Limited power source or Class 2 per IEC 60950-1.	N/A
6.2.2.4	PS1	(See appended table 6.2.2)	N/A
6.2.2.5	PS2	(See appended table 6.2.2)	N/A
6.2.2.6	PS3	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS	(See appended table 6.2.3.1) PS3, connections are reliable.	P
6.2.3.2	Resistive PIS	(See appended table 6.2.3.2) PS3	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	Enclosure made of metal; also unit supplied by Limited power source or Class 2 per IEC 60950-1.	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method		P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	Metal Enclosure, unit supplied by LPS or Class 2 per IEC 60950-1.	P
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions	(See appended table 6.4.3)	N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards	(See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS		P
6.4.7.1	General	(See tables 6.2.3.1 and 6.2.3.2)	P
6.4.7.2	Separation by distance		P
6.4.7.3	Separation by a fire barrier		P
6.4.8	Fire enclosures and fire barriers		P
6.4.8.1	Fire enclosure and fire barrier material properties		N/A
6.4.8.2.1	Requirements for a fire barrier	V-1 board.	P
6.4.8.2.2	Requirements for a fire enclosure	Unit supplied by Limited power source or Class 2 per IEC 60950-1.	N/A
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		P
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm)		N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c).....		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating	Unit has enclosure made of metal. Unit supplied by Limited power source or Class 2 per IEC 60950-1.	P
6.5	Internal and external wiring		N/A
6.5.1	Requirements	N/A	
6.5.2	Cross-sectional area (mm ²)		—
6.5.3	Requirements for interconnection to building wiring.....	(See Annex Q.)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.6	Safeguards against fire due to connection to additional equipment		N/A
	External port limited to PS2 or complies with Clause Q.1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)..... :		—
7.6	Batteries	(See Annex M)	N/A

8	MECHANICALLY-CAUSED INJURY		P
8.1	General		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		P
8.4.1	Safeguards	MS1	P
8.5	Safeguards against moving parts		N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks	(See Annex F.4 and Annex K)	N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N)		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test	(See appended table 8.5.5.2)	N/A
8.6	Stability		N/A
8.6.1	Product classification		N/A
	Instructional Safeguard		—
8.6.2	Static stability		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.2.2	Static stability test		N/A
	Applied Force		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force)		N/A
	Position of feet or movable parts		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface)		N/A
8.7.2	Direction and applied force		N/A
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N)		—
8.10.6	Thermoplastic temperature stability (°C)		N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable <i>N</i>		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas	(See Annex T)	N/A
	Button/Ball diameter (mm)		—

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Clause	Requirement + Test	Result - Remark	Verdict
9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Safeguard against thermal energy sources		N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard		N/A

10	RADIATION		N/A
10.2	Radiation energy source classification		N/A
10.2.1	General classification		N/A
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault	(See attached laser test report)	N/A
	Instructional safeguard.....		—
	Tool		—
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons		N/A
10.4.1.b)	RS3 accessible to a skilled person		N/A
	Personal safeguard (PPE) instructional safeguard		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 ..		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions	(See appended table B.3 & B.4)	N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque		N/A
10.4.1.f)	UV attenuation		N/A
10.4.1.g)	Materials resistant to degradation UV.....		N/A
10.4.1.h)	Enclosure containment of optical radiation		N/A
10.4.1.i)	Exempt Group under normal operating conditions		N/A
10.4.2	Instructional safeguard.....		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment:	(See appended table B.3 & B.4)	N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards		N/A
	Instructional safeguard for skilled person		N/A
10.5.3	Most unfavorable supply voltage to give maximum radiation		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Abnormal and single-fault condition.....:	(See appended table B.3 & B.4)	N/A
	Maximum radiation (pA/kg).....:		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A).....:		N/A
	Output voltage, unweighted r.m.s.....:		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards.....:		N/A
	Equipment safeguard prevent ordinary person to RS2.....:		—
	Means to actively inform user of increase sound pressure.....:		—
	Equipment safeguard prevent ordinary person to RS2.....:		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output.....:		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A).....:		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A).....:		—

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements.....:	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers.....:	(See Annex E)	N/A
B.2.3	Supply voltage and tolerances		N/A
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		N/A
B.3.1	General requirements.....:	(See appended table B.3)	N/A
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.3.5	Maximum load at output terminals..... :		N/A
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		N/A
B.4	Simulated single fault conditions		N/A
B.4.2	Temperature controlling device open or short-circuited	(See appended table B.4)	N/A
B.4.3	Motor tests		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature	(See Clause G.5)	N/A
B.4.4	Short circuit of functional insulation		N/A
B.4.4.1	Short circuit of clearances for functional insulation		N/A
B.4.4.2	Short circuit of creepage distances for functional insulation		N/A
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnect of passive components		N/A
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		N/A
B.4.9	Battery charging under single fault conditions.... :	(See Annex M)	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Audio amplifier normal operating conditions	There are no audio amplifiers in the unit.	N/A
	Audio signal voltage (V).....:		—
	Rated load impedance (Ω)		
E.2	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General requirements		P
	Instructions – Language	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification	DIGI	—
F.3.2.2	Model identification	See cover page.	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains	No direct connection to mains.	N/A
F.3.3.2	Equipment without direct connection to mains		P
F.3.3.3	Nature of supply voltage		—
F.3.3.4	Rated voltage.....:		—
F.3.3.4	Rated frequency		—
F.3.3.6	Rated current or rated power.....:		—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings		N/A
F.3.5.2	Switch position identification marking.....:		N/A
F.3.5.3	Replacement fuse identification and rating markings		N/A
F.3.5.4	Replacement battery identification marking		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking		—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		N/A
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
j)	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		N/A
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	Relays		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3	Protection Devices		N/A
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H).....: :		—
	Single Fault Condition: :		—
	Test Voltage (V) and Insulation Resistance (Ω) .: :		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions: :	(See appended Table B.4)	N/A
G.4	Connectors		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration: :		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	Wound Components		N/A
G.5.1	Wire insulation in wound components: :	(See Annex J)	N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s).....: :		—
	Temperature (°C).....: :		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	Transformers		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1): :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Position		—
	Method of protection		—
G.5.3.2	Insulation		N/A
	Protection from displacement of windings..... :		—
G.5.3.3	Overload test	(See appended table B.3)	N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements	No motors.	N/A
	Position		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V)		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h)		N/A
	Electric strength test (V)		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A
	Electric strength test (V)		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h).....		N/A
	Electric strength test (V)		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		N/A
G.6.1	General		N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	Mains supply cords		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	General requirements		N/A
	Type..... :		—
	Rated current (A) :		—
	Cross-sectional area (mm ²), (AWG)..... :		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)..... :		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)..... :		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry..... :	(See appended table 5.4.11.1)	N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) :		—
	Diameter (m)..... :		—
	Temperature (°C)..... :		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	Varistors		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test..... :	(See appended table B.3)	N/A
G.8.3.3	Temporary overvoltage..... :	(See appended table B.3)	N/A
G.9	Integrated Circuit (IC) Current Limiters		
G.9.1 a)	Manufacturer defines limit at max. 5A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA :		—
G.9.1 d)	IC limiter output current (max. 5A)..... :		—
G.9.1 e)	Manufacturers' defined drift :		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.10	Resistors		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	Capacitor and RC units		N/A
G.11.1	General requirements		N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)		N/A
	Type test voltage V_{ini}		—
	Routine test voltage, $V_{ini,b}$		—
G.13	Printed boards		N/A
G.13.1	General requirements		N/A
G.13.2	Uncoated printed boards		N/A
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction)		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation	(See appended table 5.4.4.5)	N/A
	Number of insulation layers (pcs)		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements	(See G.13)	N/A
G.15	Liquid filled components		

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Clause	Requirement + Test	Result - Remark	Verdict
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance		—
D3)	Resistance		—
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz)		—
H.3.1.2	Voltage (V)		—
H.3.1.3	Cadence; time (s) and voltage (V)		—
H.3.1.4	Single fault current (mA):.....		—
H.3.2	Tripping device and monitoring voltage.....		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)		—
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		N/A
	General requirements	(See separate test report)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
K	SAFETY INTERLOCKS		
K.1	General requirements		N/A
K.2	Components of safety interlock safeguard mechanism	(See Annex G)	N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance..... :	(See appended table B.4)	N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location)		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test	(See appended table 5.4.11)	N/A
L	DISCONNECT DEVICES		N/A
L.1	General requirements		N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method).... :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance	(See appended Tables and Annex M and M.4)	N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature	(See Table M.4)	—
M.4.2.2 b)	Single faults in charging circuitry	(See Annex B.4)	—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method)		N/A
M.6.2	Leakage current (mA)		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s).....:		—
M.8.2.3	Correction factors		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing)		N/A
N	ELECTROCHEMICAL POTENTIALS		N/A
	Metal(s) used.....:	Pollution degree considered	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		N/A
	Figures O.1 to O.20 of this Annex applied		—
P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		N/A
P.1	General requirements		N/A
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm)		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts.....:		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard)		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	T _c (°C)		—
	T _r (°C)		—
	T _a (°C)		—
P.4.2 b)	Abrasion testing	(See G.13.6.2)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
P.4.2 c)	Mechanical strength testing.....:	(See Annex T)	N/A
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		N/A
Q.1	Limited power sources	Unit intended to be supplied by a Limited Power Source or Class 2 power source.	N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A)		—
	Current limiting method		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A).		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....:		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material.....:		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material.....:		—
	Wall thickness (mm)		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....:		—
	Wall thickness (mm)		—
	Conditioning (test condition), (°C)		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	MECHANICAL STRENGTH TESTS		N/A
T.1	General requirements	Substantial metal. Complies based on construction.	N/A
T.2	Steady force test, 10 N	(See appended table T.2)	N/A
T.3	Steady force test, 30 N	(See appended table T3)	N/A
T.4	Steady force test, 100 N	(See appended table T4)	N/A
T.5	Steady force test, 250 N	(See appended table T5)	N/A
T.6	Enclosure impact test	(See appended table T6)	N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test	(See appended table T7)	N/A
T.8	Stress relief test.....	(See appended table T8)	N/A
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J)		—
	Height (m)		—
T.10	Glass fragmentation test.....	(See sub-clause 4.4.4.9)	N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		—

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Clause	Requirement + Test	Result - Remark	Verdict
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....:	(See Annex T)	N/A
V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		N/A
V.1	Accessible parts of equipment		N/A
V.2	Accessible part criterion		N/A

4.1.2					
TABLE: List of critical components					
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹
Enclosure Base	Interchangeable	Interchangeable	Powder coated aluminum. 0.10 inch thick. Overall 5 X 3 X 2 inches.	--	--
Enclosure Cover	Interchangeable	Interchangeable	Cast aluminum, T-shaped, provides support and heat sink for both PWB assemblies, one on each side, secured by screws. Back plane is notched to allow mount bracket engagement. Overall dimensions - 5 by 3 by 2 in.	--	--
Enclosure Faceplate	Interchangeable	Interchangeable	Aluminum, secured to Base by two screws and antenna jack hardware.	--	--
Printed Wiring Board	Interchangeable	Interchangeable	V-1, 105C min	UL 796	UR ¹
Antenna Connectors – quantity 2	Interchangeable	Interchangeable	Made of metal	--	--
SELV connectors	Interchangeable	Interchangeable	Rated min 30Vdc	UL 498, UL 1977	UR ¹
SELV connectors - alternate	Interchangeable	Interchangeable	Copper alloy pins housed in V-2 min material	UL 94	UR ¹
SIM Card Slots – quantity 2	Interchangeable	Interchangeable	Located on opposite side of Option PWB, accessible only by removal of SIM Card Door by a tool.	--	--
Thermal Pads	Bergquist CO	Gap Pad 2500S20	V-2 min, RTI=150°C, 3.2 mm nominal thickness. Placed on top of integral heat sink of Base to make contact with bottom of RF Module.	UL 94	UR ¹
Thermal Pad - alternate	Bergquist CO	Gap Filler 1500	Rated V-0, RTI: 150C. , 3.2 mm nominal thickness. Placed on top of integral heat sink of Base to make contact with bottom of RF Module.	UL 94	UR ¹
RF Module	Sierra Wireless	MC7354	Located in J1 of daughter board.	--	--*
RF Module – alternate	Huawei	ME909u-521 PCIe	Located in J1 of daughter board.	--	--*
RF Module - alternate	Telit	HE910 Mini PCIe	Located in J1 of daughter board.	--	--*
RF Module – alternate	Telit	LE910-V2	Located in J1 of daughter board.	--	--*
RF Module – alternate	U-Blox	MPCI-L280	Located in J1 of daughter board.	--	--*
RF Module – alternate	Cellient	MPL200MB	Located in J1 of daughter board.	--	--*
RF Module – alternate	Cellient	MPL200	Located in J1 of daughter board.	--	--*
RF Module – alternate	Telit	LE910 EUv2	Located in J1 of daughter board.	--	--*
RF Module – alternate	Telit	LE910 NAV2	Located in J1 of daughter board.	--	--*

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Clause	Requirement + Test		Result - Remark	Verdict	
RF Module – alternate	Sierra Wireless	MC7430	Located in J1 of daughter board.	--	--*
RF Module – alternate	Sierra Wireless	MC7455	Located in J1 of the daughter board	--	--*
RF Module – alternate	Cellient	MPN200	Located in J1 of the daughter board	--	--*
Antenna Wiring	Interchangeable	Interchangeable	30V min, 80C min insulated with FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1.	UL758	UR ¹
Marking Plate Label	Commerce Label Inc.	Label: CLJ-400; Adhesive: THERMLfilm SELECT 21940; Ink: DNP R300	Suitable for surface. (Tested for durability of marking test)	--	--
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039. ²⁾ Description line content is optional. Main line description needs to clearly detail the component used for testing * Evaluated as part of the investigation					

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Clause	Requirement + Test	Result - Remark	Verdict
4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests		N/A
(The following mechanical tests are conducted in the sequence noted.)			
4.8.4.2	TABLE: Stress Relief test		—
	Part	Material	Oven Temperature (°C)
4.8.4.3	TABLE: Battery replacement test		—
	Battery part no. :		—
	Battery Installation/withdrawal	Battery Installation/Removal Cycle	Comments
		1	
		2	
		3	
		4	
		5	
		6	
		8	
		9	
		10	
4.8.4.4	TABLE: Drop test		—
	Impact Area	Drop Distance	Drop No.
			1
			2
			3
4.8.4.5	TABLE: Impact		—
	Impacts per surface	Surface tested	Impact energy (Nm)
4.8.4.6	TABLE: Crush test		—
	Test position	Surface tested	Crushing Force (N)
			Duration force applied (s)
Supplementary information:			

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Clause	Requirement + Test	Result - Remark	Verdict

4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result			N/A
Test position	Surface tested	Force (N)	Duration force applied (s)	
Supplementary information:				

5.2	Table: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (A _{pk} or A _{rms})	Hz	
1	Steady State	Unit	Normal	30 Vdc	N/A	N/A	ES1
			Abnormal	30 Vdc	N/A	N/A	
			Single fault - SC/OC	30 Vdc	N/A	N/A	
			Normal				
			Abnormal				
			Single fault - SC/OC				
5.2.2.3 - Capacitance Limits							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class	
				Capacitance, nF	U _{pk} (V)		
			Normal				
			Abnormal				
			Single fault - SC/OC				
5.2.2.4 - Single Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	U _{pk} (V)	I _{pk} (mA)	
			Normal				
			Abnormal				
			Single fault – SC/OC				
5.2.2.5 - Repetitive Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	U _{pk} (V)	I _{pk} (mA)	
			Normal				
			Abnormal				
			Single fault – SC/OC				
Test Conditions:							
Normal –							
Abnormal -							
Supplementary information: SC=Short Circuit, OC=Short Circuit							

IEC 62368-1						
Clause	Requirement + Test	Result - Remark				Verdict
5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V)	9 Vdc	9 Vdc	33.0 VDC / 0.075 A / 2.475 W / MAXIMUM TEMPERATURES	--	—
	Ambient T _{min} (°C)	--	--	--	--	—
	Ambient T _{max} (°C)	--	--	--	--	—
	T _{ma} (°C)	--	--	74	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T _{max} (°C)
Ambient		23.8	70	--	--	--
Outer Enclosure		26.9	73.1	--	--	90*
Faceplate		26.7	72.9	--	--	90*
J3 power connector		29.2	75.4	--	--	95
Antenna wiring		30.2	76.4	--	--	80
Printed Wiring Board adjacent to Wireless card MC7534		34.7	80.9	--	--	105
Printed Wiring Board near U29		37.1	83.3	--	--	105
L1 coil		33.8	80.0	--	--	90
L6 core		34.1	80.3	--	--	90
Printed wiring board near U25		34.4	80.6	--	--	105
Printed Wiring board between U1 and U2		35.1	81.3	--	--	105
--		--	--	--	--	--
Digi International, WR31-M82A-DE1-TB w/Sierra MC7455 (IMEI 359072060111347), w/2 Antennas, w/AT&T SIM Card. Sample employs Bergquist Gap Filler 1500 between heatsink and RF module / Regarding model WR31-M82A-DE1-TB, Analog I/O loaded at 10Vdc, 50mA (based on test set-up using 200 ohm resistor - NOTE that actual I/O load rating is 20mA but customer requested to test at 50mA). Digital I/O loaded to 30Vdc, 200mA (based on test set-up using 150 ohm resistor)		--	--	--	--	--
Ambient 1 (Chamber)		--	--	76.2	--	74
Ambient 2 (Chamber)		--	--	76.4	--	74
Surrounding Air Temp (Measured at a point located approximately 10 cm above the sample under test) - Laboratory Ambient		--	--	23.0	--	--
Power Supply Terminal J3		--	--	78.5	--	95

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Clause	Requirement + Test			Result - Remark			Verdict
Printed Wiring Board Adjacent to Wireless Card MC7455	--	--	80.3	--			105
Antenna Wiring	--	--	79.3	--			80
Printed Wiring Board between U1 and U2	--	--	82.2	--			105
Printed Wiring Board near U29	--	--	83.6	--			105
Outer Enclosure	--	--	76.2	--			90*
J3 Power Connector	--	--	76.3	--			95
Supplementary information: Maximum temperatures observed recorded above. A TMRA of 74°C was taken into account for compliance. *Restricted Access, Hot marking label applied to unit. Maximum Normal Load: Running the CPU to maximum, exercising the cellular modem transmitter, USB connection, serial port and Ethernet.							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Penetration (mm)				—
Object/ Part No./Material	Manufacturer/trademark	T softening (°C)		
supplementary information:				

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			N/A
Allowed impression diameter (mm)	≤ 2 mm			—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
Supplementary information:				

5.4.2.2, 5.4.2.4 and	TABLE: Minimum Clearances/Creepage distance	N/A

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Clause	Requirement + Test			Result - Remark			Verdict
5.4.3							
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) ¹	Required cl (mm)	cl (mm) ²	Required ³ cr (mm)	cr (mm)
Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group							

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage			N/A
	Overvoltage Category (OV):			
	Pollution Degree:			
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)	
Supplementary information:				

5.4.2.4	TABLE: Clearances based on electric strength test			N/A
Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No	
Supplementary information:				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					N/A
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
Supplementary information:						

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.9	TABLE: Electric strength tests			N/A
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
Functional:				
Basic/supplementary:				
Reinforced:				
Routine Tests:				
Supplementary information:				

5.5.2.2	TABLE: Stored discharge on capacitors					N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	
Supplementary information:						
X-capacitors installed for testing are:						
<input type="checkbox"/> bleeding resistor rating:						
<input type="checkbox"/> ICX:						
Notes:						
A. Test Location:						
Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth						
B. Operating condition abbreviations:						
N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition						

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Clause	Requirement + Test	Result - Remark	Verdict

5.6.6.2	TABLE: Resistance of protective conductors and terminations				N/A
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
Supplementary information:					

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		N/A
Supply voltage..... :			—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7		Touch current (mA)
	1		
	2*		
	3		
	4		
	5		
	6		
	8		
Supplementary Information:			
Notes:			
[1] Supply voltage is the anticipated maximum Touch Voltage			
[2] Earthed neutral conductor [Voltage differences less than 1% or more]			
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3			
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.			
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.			

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s [*]	PS Classification
A	Unit input	Power (W) :			Assumed to be PS3
		V _A (V) :			
		I _A (A) :			
B		Power (W) :			
		V _A (V) :			
		I _A (A) :			
C		Power (W) :			
		V _A (V) :			
		I _A (A) :			
D		Power (W) :			
		V _A (V) :			
		I _A (A) :			

Supplementary Information:
 (*) Measurement taken only when limits at 3 seconds exceed PS1 limits

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)			P
Location	Open circuit voltage After 3 s (V _p)	Measured r.m.s current (I _{rms})	Calculated value (V _p x I _{rms})	Arcing PIS? Yes / No
Unit input	--	--	--	Yes

Supplementary information:

An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.

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Clause	Requirement + Test	Result - Remark	Verdict

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)				P
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
Unit	--	--	--	--	Yes

Supplementary Information:

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.
 If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.
 A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

8.5.5	TABLE: High Pressure Lamp	N/A
Description	Values	Energy Source Classification
Lamp type		—
Manufacturer		—
Cat no.		—
Pressure (cold) (MPa)		MS_
Pressure (operating) (MPa)		MS_
Operating time (minutes).....		—
Explosion method.....		—
Max particle length escaping enclosure (mm).:		MS_
Max particle length beyond 1 m (mm)		MS_
Overall result		

Supplementary information:

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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5	TABLE: Input test							P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
9	0.705	2	6.34	--	--	--	MNL	
12	0.533	2	6.39	--	--	--	MNL	
24	0.288	2	6.912	--	--	--	MNL	
30	0.236	2	7.08	--	--	--	MNL	

The following input measurements were taken using Digi International, WR31-M82A-DE1-TB w/Sierra MC7455 (IMEI 359072060111347), w/2 Antennas, w/AT&T SIM Card, with Bergquist Gap Filler 1500 between heatsink and RF module.

8.1VDC	0.250	--	2.025	--	--	--	See above set-up information. See below I/O loading conditions.
9VDC	0.225	2	2.025	--	--	--	See above set-up information. See below I/O loading conditions.
12VDC	0.175	2	2.1	--	--	--	See above set-up information. See below I/O loading conditions.
24VDC	0.095	2	2.28	--	--	--	See above set-up information. See below I/O loading conditions.
30VDC	0.080	2	2.4	--	--	--	See above set-up information. See below I/O loading conditions.
33VDC	0.075	--	2.475	--	--	--	See above set-up information. See below I/O loading conditions.

Supplementary information: MNL is defined as running the CPU to maximum, exercising the cellular modem transmitter, USB connection, serial port and Ethernet connection.

Equipment may be have rated current or rated power or both. Both should be measured.

Power values calculated based on measured voltage and current, and provided for reference only.

Regarding model WR31-M82A-DE1-TB I/O Loading Conditions: Analog I/O loaded at 10Vdc, 50mA (based on test set-up using 200 ohm resistor - NOTE that actual I/O load rating is 20mA but customer requested to test at 50mA). Digital I/O loaded to 30Vdc, 200mA (based on test set-up using 150 ohm resistor)

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Clause	Requirement + Test	Result - Remark	Verdict

B.3	TABLE: Abnormal operating condition tests							N/A
Ambient temperature (°C)							—	
Power source for EUT: Manufacturer, model/type, output rating .:							—	
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
<p>Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.</p>								

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

B.4		TABLE: Fault condition tests							N/A
Ambient temperature (°C)									—
Power source for EUT: Manufacturer, model/type, output rating . :									—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
Supplementary information:									

Annex M		TABLE: Batteries								N/A
The tests of Annex M are applicable only when appropriate battery data is not available										
Is it possible to install the battery in a reverse polarity position?										
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition										
Max. current during fault condition										
Test results:										
- Chemical leaks									Verdict	
- Explosion of the battery										
- Emission of flame or expulsion of molten metal										
- Electric strength tests of equipment after completion of tests										
Supplementary information:										

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Annex M.4			Table: Additional safeguards for equipment containing secondary lithium batteries			N/A
Battery/Cell No.	Test conditions	Measurements			Observation	
		U	I (A)	Temp (C)		
	Normal					
	Abnormal					
	Single fault –SC/OC					
	Normal					
	Abnormal					
	Single fault – SC/OC					
Supplementary Information:						
Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at T_{highest} (°C)	Observation		
Supplementary Information:						

Annex Q.1		TABLE: Circuits intended for interconnection with building wiring (LPS)				N/A
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
Supplementary Information: SC=Short circuit, OC=Open circuit						

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

T.2, T.3, T.4, T.5	TABLE: Steady force test					N/A
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	

Supplementary information:

T.6, T.9	TABLE: Impact tests				N/A
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	

Supplementary information:

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	

Supplementary information:

T.8	TABLE: Stress relief test					N/A
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	

Supplementary information:

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Manufacturer Testing Laboratory according to TMP/CTF stage 1 or WMT/CTF stage 2 procedure has been used.

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date
		N/A – Testing at NBK CBTL		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 DENMARK NATIONAL DIFFERENCES Audio/video, information and communication technology equipment – Part 1: Safety requirements	
Differences according to	: DS/EN 62368-1:2014
Attachment Form No.	: DK_ND_IEC62368_1B
Attachment Originator	: UL (Demko)
Master Attachment	: 2014-10
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	National Differences	--
4.1.15	<p>To the end of the subclause the following is added:</p> <p>Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows: “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.”</p>	N/A
5.2.2.2	<p>After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.1	<p>Add to the end of the subclause:</p> <p>Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment.</p> <p>Justification: In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>		N/A
5.7.5	<p>To the end of the subclause the following is added:</p> <p>The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>		N/A
5.7.6.2	<p>To the end of the subclause the following is added:</p> <p>The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA.</p>		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p>Justification: Heavy Current Regulations, Section 6c</p>		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment Part 1: Safety requirements)	
Differences according to	: EN 62368-1:2014
Attachment Form No.	: EU_GD_IEC62368_1B
Attachment Originator	: Intertek Semko AB
Master Attachment	: Date (2015-08)
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	CENELEC COMMON MODIFICATIONS (EN)	--
1	NOTE Z1	P
4.Z1	Protective devices included as integral parts of the equipment or as parts of the building installation:	N/A
	a) Included as parts of the equipment	N/A
	b) For components in series with the mains; by devices in the building installation	N/A
	c) For pluggable type B or permanently connected; by devices in the building installation	N/A
5.4.2.3.2.4	Interconnection with external circuit	N/A
10.2.1	Additional requirements in 10.5.1	N/A
10.5.1	RS1 compliance measurement conditions	N/A
10.6.2.1	EN 71-1:2011, 4.20 and methods and distances	N/A
10.Z1	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz	N/A
G.7.1	NOTE Z1	N/A

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)	--
4.1.15	Denmark, Finland, Norway and Sweden: Class I pluggable equipment type A marking	N/A
4.7.3	United Kingdom: Torque test socket-outlet BS 1363, and the plug part BS 1363.	N/A
5.2.2.2	Denmark: Warning for high touchcurrent	N/A
5.4.11.1 and Annex G	Finland and Sweden: Separation of the telecommunication network from earth	N/A
5.5.2.1	Norway: Capacitors rated for the applicable line-to-line voltage (230 V).	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	Finland, Norway and Sweden: Resistors used as basic safeguard or bridging basic insulation comply with G.10.1 and G.10.2.		N/A
5.6.1	Denmark: Protection for pluggable equipment type A; integral part of the equipment		N/A
5.6.4.2.1	Ireland and United Kingdom: The protective current rating is taken to be 13 A		N/A
5.6.5.1	Ireland and United Kingdom: Conductor sizes of flexible cords to be accepted by terminals for equipment rated 10 A to 13 A		N/A
5.7.5	Denmark: The installation instruction affixed to the equipment if high protective conductor current		N/A
5.7.6.1	Norway and Sweden: Television distribution system isolation text in user manual		N/A
5.7.6.2	Denmark: Warning for high touch current		N/A
B.3.1 and B.4	Ireland and United Kingdom: Tests conducted using an external miniature circuit breaker or protective devices included as an integral part of the direct plug-in equipment		N/A
G.4.2	Denmark: Appliances rated ≤ 13 A provided with a plug according to DS 60884-2-D1:2011.		N/A
	Class I equipment provided with socket-outlets provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.		N/A
	If a single-phase equipment having rated >13 A or poly-phase equipment provided with a supply cord with a plug, plug in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.		N/A
	Mains socket outlets intended for providing power to Class II apparatus rated 2,5 A in accordance with DS 60884-2-D1:2011 standard sheet DKA 1-4a.		N/A
	Other current rating socket outlets in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.		N/A
	Mains socket-outlets with earth in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	United Kingdom: The plug part of direct plug-in equipment assessed to BS 1363		N/A
G.7.1	United Kingdom: Equipment fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768		N/A
G.7.1	Ireland: Apparatus provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use		N/A
G.7.2	Ireland and United Kingdom: A power supply cord for equipment which is rated over 10 A and up to and including 13 A.		N/A

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)	--
10.5.2	Germany: Cathode ray tube intended for the display of visual images, authorization or application of type approval and marking.	N/A
F.1	Italy: The power consumption in Watts (W) indicated on TV receiver and in instruction for use	N/A
	TV receivers provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language.	N/A
	Marking for controls and terminals in Italian language.	N/A
	Conformity declaration according to the above requirements in the instruction manual	N/A
	First importers of TV receivers manufactured outside EEC previous conformity certification to the Italian Post Ministry and Certification number on the backcover.	N/A

ATTACHMENT TO TEST REPORT IEC 62368-1 2th Ed.

U.S.A. NATIONAL DIFFERENCES

Audio/video, information and communication technology equipment – Part 1: Safety requirements

Differences according to : CSA/UL 62368-1:2014

Attachment Form No. : US&CA_ND_IEC623681B

Attachment Originator : UL(US)

Master Attachment : Date 2015-06

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Clause	Requirement + Test	Result - Remark	Verdict
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IEC 62368-1 - US and Canadian National Differences			
Special National Conditions based on Regulations and Other National Differences			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1.17	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment		N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.		N/A
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding $42.4 V_{peak}$ or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex M	Battery packs for stationary applications comply with special component requirements.		N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than $0.76 m^3$ (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.		N/A
	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.		N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."		N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1 are marked with the voltage rating and "Class 2" or equivalent; marking is located adjacent to the terminals and visible during wiring.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.		N/A
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.		N/A
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ENCLOSURES		
<u>Type</u>	<u>Supplement ID</u>	<u>Description</u>
Photographs	3-01	Outer Top/Front View
Photographs	3-02	Outer Rear with Din Rail
Photographs	3-03	Close up View of Front Connectors
Photographs	3-05	Internal View of Daughter Board Top Side
Photographs	3-06	Internal View of Motherboard top side
Photographs	3-07	Motherboard bottom side view
Photographs	3-08	Daughter Board Bottom Side View
Photographs	3-09	Hot Surface Marking
Diagrams	4-01	Mechanical Drawing - Metal Base
Diagrams	4-02	Mechanical Drawing - Metal Back
Diagrams	4-03	Mechanical Drawing - Top Level Assembly
Diagrams	4-04	Mechanical Drawing - Front Plastic Housing / MASK
Diagrams	4-05	Interconnecting Cable and PCB Assembly / Base
Diagrams	4-06	Mechanical Drawing - Sub Level Assembly
Schematics + PWB	5-01	Main Board - Component Layout Drawing
Schematics + PWB	5-02	Main Board - Component Layout Drawing - Reverse
Schematics + PWB	5-03	Schematics
Manual	6-01	Manual
Miscellaneous	7-01	Manufacturer's Declaration Letter
Miscellaneous	7-02	Cable Routing
Miscellaneous	7-03	Mini Display Port Cable
Miscellaneous	7-04	Tablet Charge Cable
Miscellaneous	7-05	Audio Cable
Miscellaneous	7-06	USB Cable

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Photographs ID 3-01



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Photographs ID 3-02



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Photographs ID 3-03



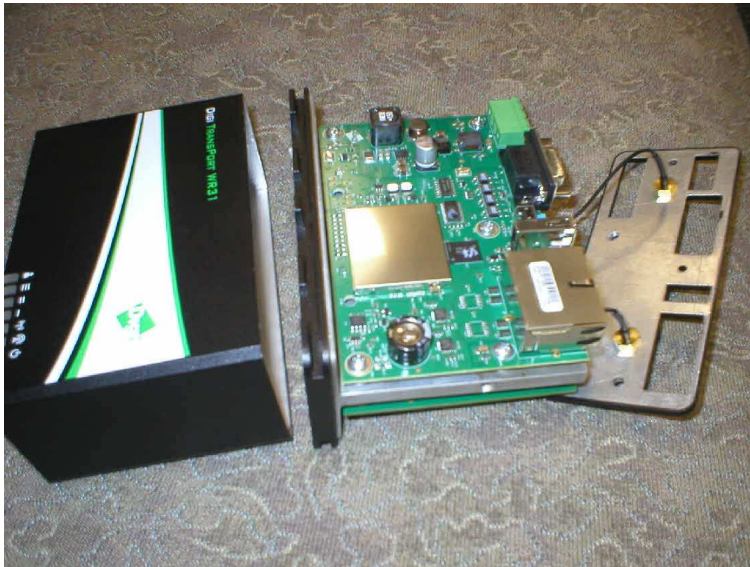
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Clause	Requirement + Test	Result - Remark	Verdict

Photographs ID 3-05



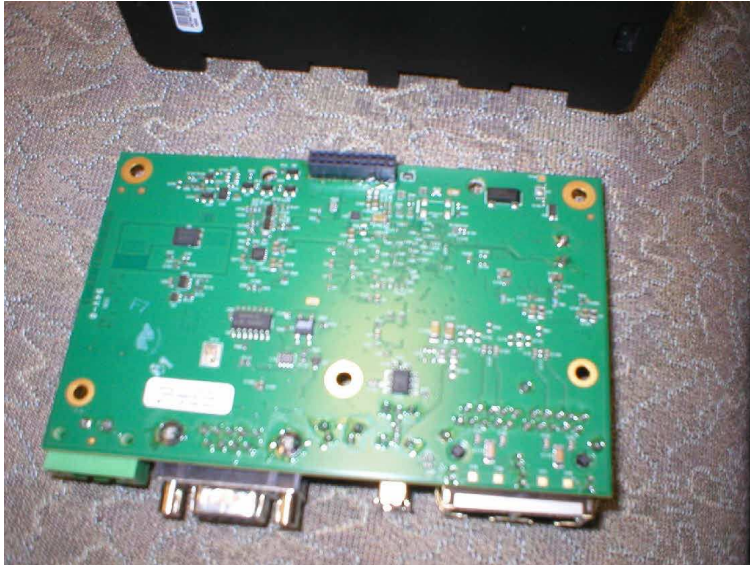
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Photographs ID 3-06



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Photographs ID 3-07



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Photographs ID 3-08



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

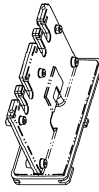
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IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
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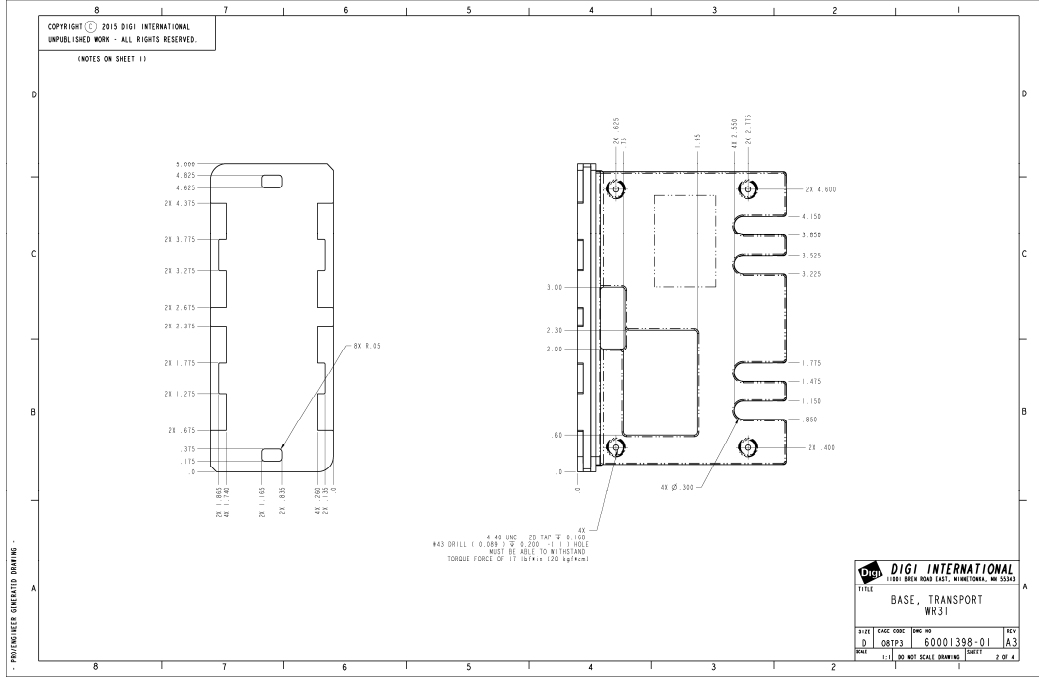
Diagrams ID 4-01

P:\ENGINEER GENERATED DRAWING	8 7 6 5 4 3 2 1	8 7 6 5 4 3 2 1	REVISION HISTORY <table border="1"> <thead> <tr> <th>REV</th> <th>ECO</th> <th>DESCRIPTION</th> <th>DATE</th> <th>DRW/CHK</th> </tr> </thead> <tbody> <tr> <td>A3</td> <td></td> <td>INITIAL RELEASE MPRO.004283</td> <td></td> <td>LSAUK15 TJM/KAL</td> </tr> </tbody> </table>	REV	ECO	DESCRIPTION	DATE	DRW/CHK	A3		INITIAL RELEASE MPRO.004283		LSAUK15 TJM/KAL
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A3		INITIAL RELEASE MPRO.004283		LSAUK15 TJM/KAL									
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Clause	Requirement + Test	Result - Remark	Verdict
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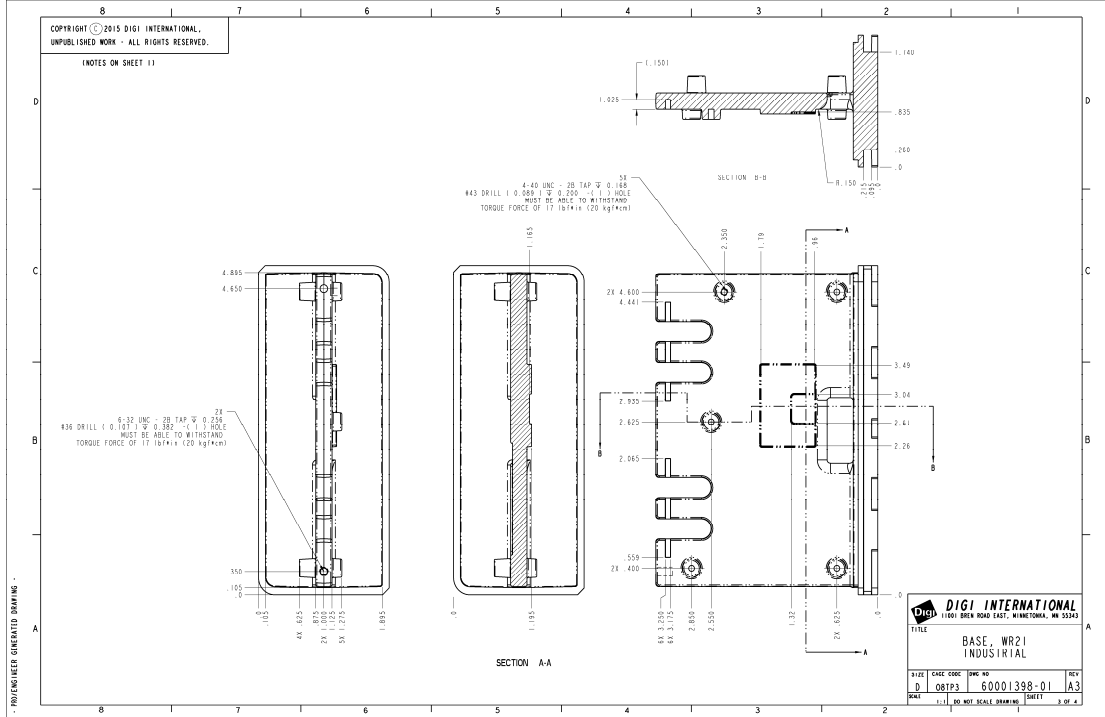
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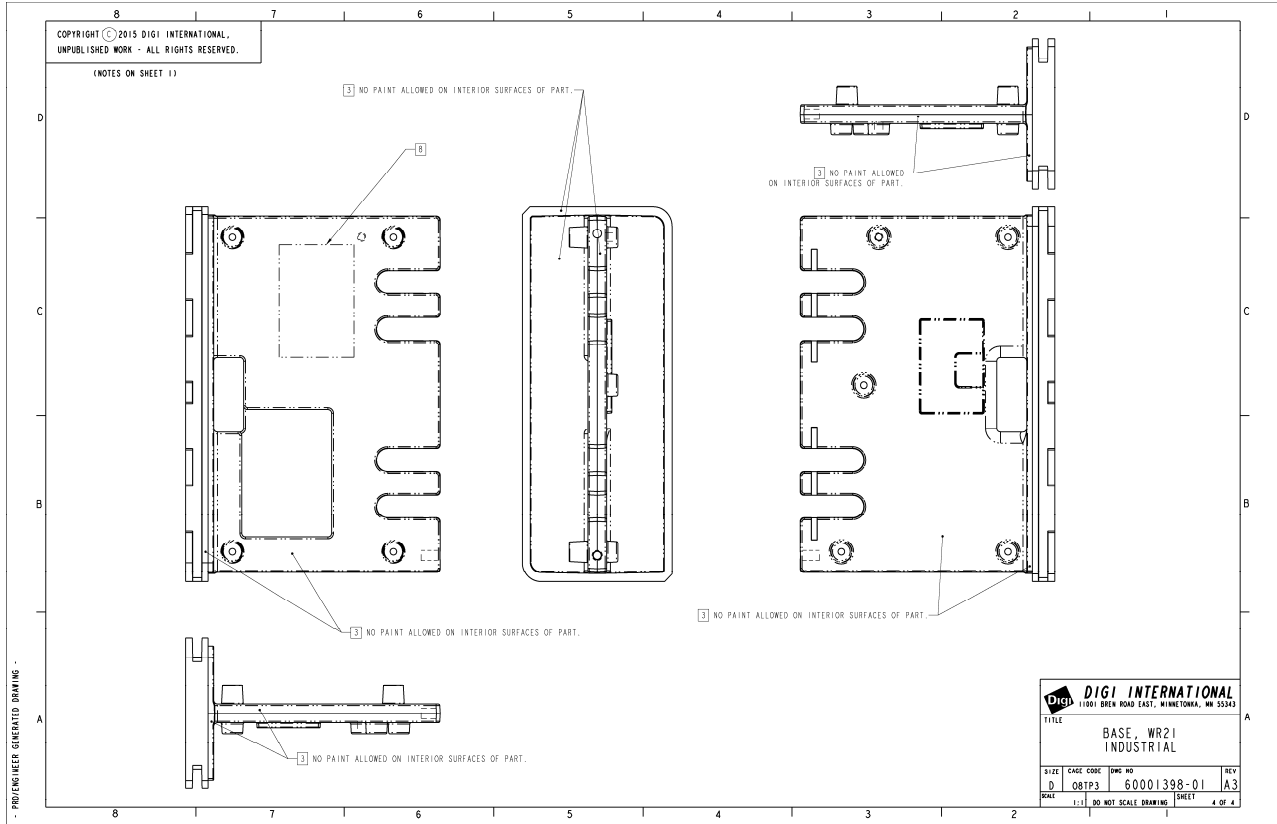
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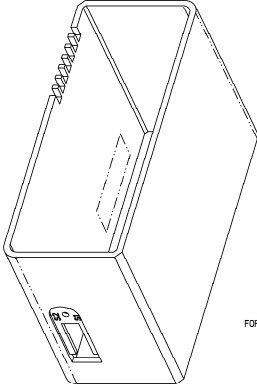
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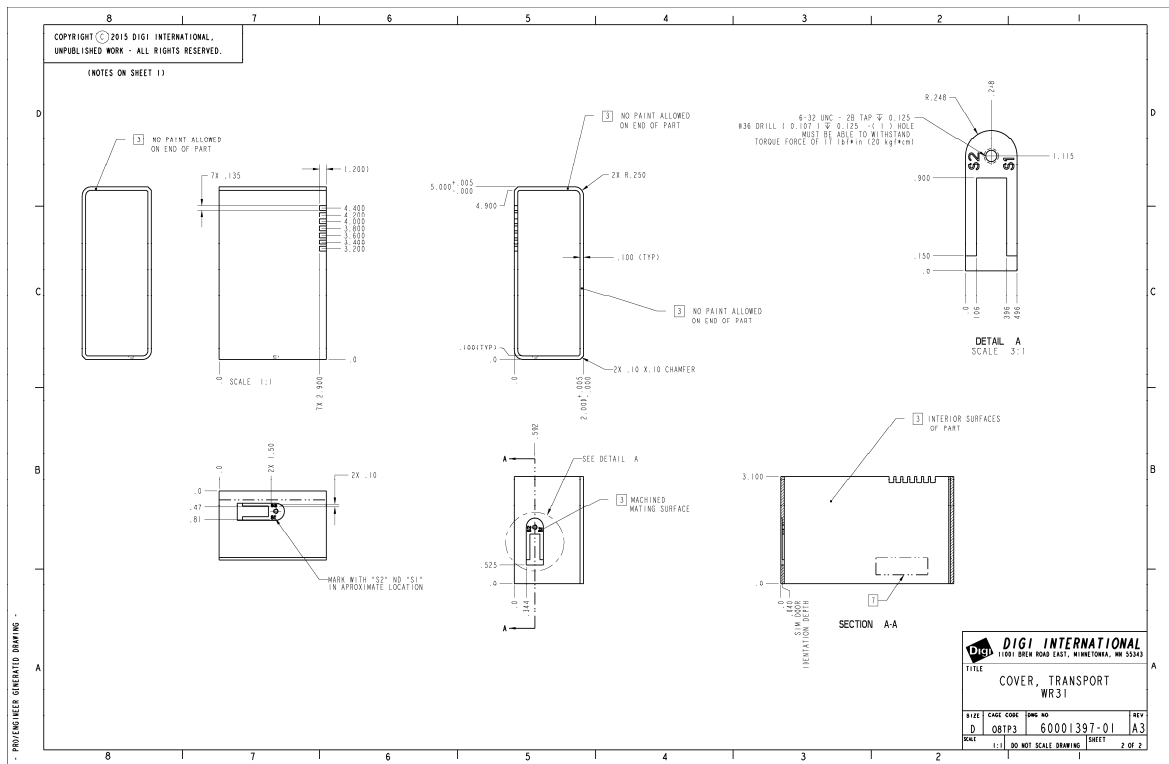
Clause	Requirement + Test	Result - Remark	Verdict
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Diagrams ID 4-02

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<p>11 PART NUMBER</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>PART NUMBER</th> <th>PART REVISION</th> <th>DESCRIPTION</th> <th>ARTWORK NUMBER</th> <th>ARTWORK REVISION</th> </tr> </thead> <tbody> <tr> <td>60001397-01</td> <td>A3</td> <td>COVER, TRANSPORT WRS1</td> <td>60002336</td> <td>A</td> </tr> </tbody> </table>	PART NUMBER	PART REVISION	DESCRIPTION	ARTWORK NUMBER	ARTWORK REVISION	60001397-01	A3	COVER, TRANSPORT WRS1	60002336	A	<p>12 DIGI INTERNATIONAL 1100 BEEK ROAD EAST, MINNETONKA, MN 55345</p> <p>COVER, TRANSPORT WRS1</p> <p>DATE: 15-AUG-15 CAGE CODE: 60001397-01 REV: A3</p> <p>SCALE: 1:1, NO MET. SCALE DRAWING</p> <p>SHEET 1 OF 2</p>							
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60001397-01	A3	COVER, TRANSPORT WRS1	60002336	A														


IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Diagrams ID 4-02



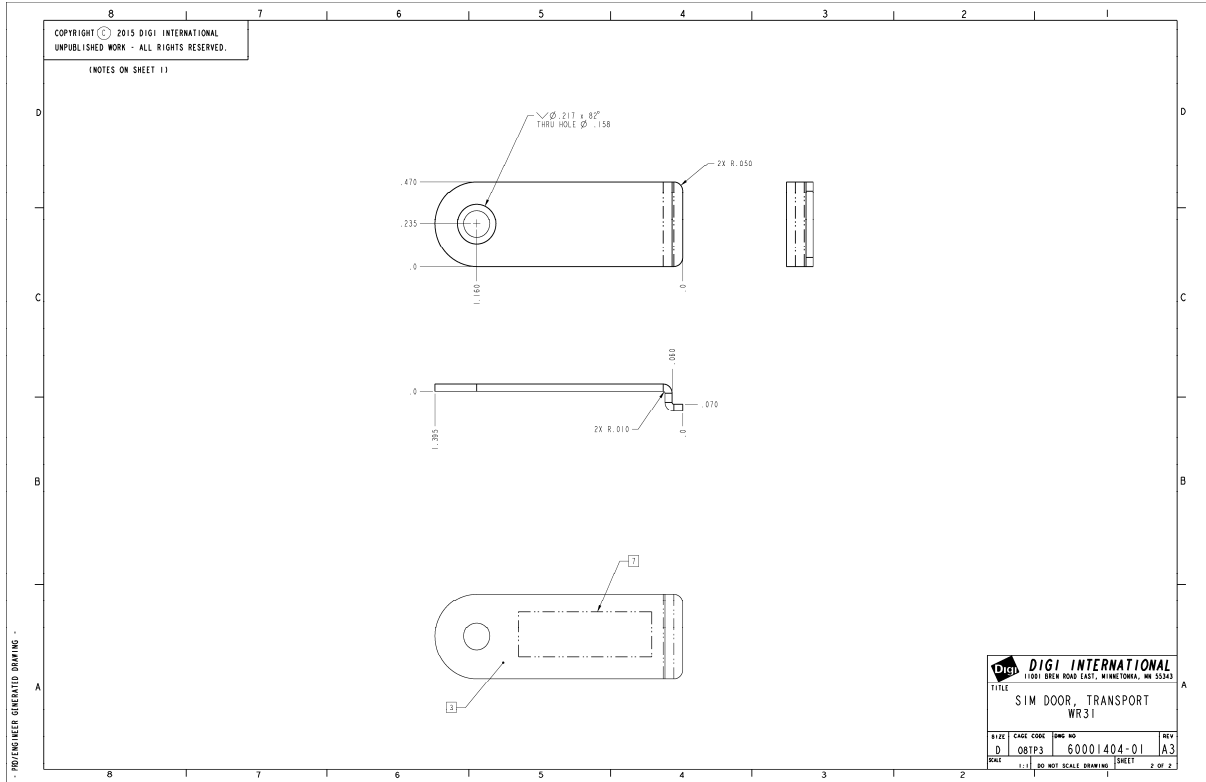
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Diagrams ID 4-03

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A3		INITIAL RELEASE WPRO 004293		ISAUDIS/TJWAL															
<p>A B C D</p>	<p>UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS AND TOLERANCES ARE IN INCHES AND SHALL BE INTERPRETED PER ASME Y14.5M - 1994.</p> <p>FRACTIONS DECIMALS ANGLES 1/16" .03125 30°</p> <p>DRAWING TOLERANCES ARE AS FOLLOWS: FRACTIONS DECIMALS ANGLES ±.004 ±.003 ±.002 ±.001</p> <p>THIS DRAWING AND SPECIFICATION ARE THE PROPERTY OF DIGI INTERNATIONAL. NO PART OF THIS DRAWING OR SPECIFICATION SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF DIGI INTERNATIONAL.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DESIGN/ENGINEER: T. MILLER</td> <td>DATE: 15-Aug-15</td> <td rowspan="2" style="text-align: center;">DIGI INTERNATIONAL 1101 BROWN ROAD EAST, WILMINGTON, NH 03263</td> </tr> <tr> <td>DRAWN BY: N. HERMAN</td> <td>DATE: 15-Aug-15</td> </tr> <tr> <td>CHECKED BY: A. SURI</td> <td>DATE: 15-Aug-15</td> <td>TITLE: SIM DOOR, TRANSPORT WR 31</td> </tr> <tr> <td>DATE: 15-Aug-15</td> <td>DATE: 15-Aug-15</td> <td>SIZE: CASE CODE: DRG NO:</td> </tr> <tr> <td>PRODUCT MANAGER: A. LUND</td> <td>DATE: 15-Aug-15</td> <td>D: 08TP3 60001404-01</td> </tr> <tr> <td></td> <td></td> <td>SHEET: 1 OF 2</td> </tr> </table>	DESIGN/ENGINEER: T. MILLER	DATE: 15-Aug-15	DIGI INTERNATIONAL 1101 BROWN ROAD EAST, WILMINGTON, NH 03263	DRAWN BY: N. HERMAN	DATE: 15-Aug-15	CHECKED BY: A. SURI	DATE: 15-Aug-15	TITLE: SIM DOOR, TRANSPORT WR 31	DATE: 15-Aug-15	DATE: 15-Aug-15	SIZE: CASE CODE: DRG NO:	PRODUCT MANAGER: A. LUND	DATE: 15-Aug-15	D: 08TP3 60001404-01			SHEET: 1 OF 2
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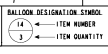

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

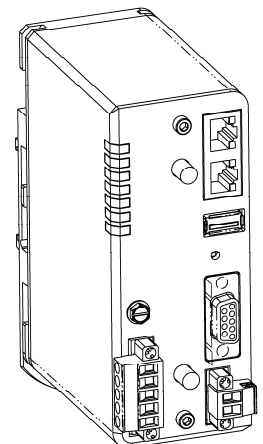
Diagrams ID 4-03



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Diagrams ID 4-04

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REV	ECO	DESCRIPTION	DATE															
1P		INITIAL RELEASE NPRO 004293																
<p>UNLESS OTHERWISE SPECIFIED</p> <p>ALL DIMENSIONS AND TOLERANCES ARE IN INCHES AND SHALL BE INTERPRETED PER ASME Y14.5M - 1994.</p> <p>DRAWING TOLERANCES ARE AS FOLLOWS:</p> <p>FRACTIONS DECIMAL ANGLES .XX.XX .XX .XX .XXE .XX</p> <p>THIS ONE AND SPECIFICATION ARE THE PROPERTY OF DIGI. INFORMATION AND SHALL NOT BE DISCLOSED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF DIGI.</p>	<p>DESIGN/ENGINEER: T. MILLER</p> <p>DATE: 15-Aug-15</p> <p>IN CHARGE: N. HERMAN</p> <p>DATE: 15-Aug-15</p> <p>DESIGNER: A. SURJ</p> <p>DATE: 15-Aug-15</p> <p>DRAWN: T. MILLER</p> <p>DATE: 15-Aug-15</p> <p>PRODUCT MANAGER: A. LUND</p> <p>DATE: 15-Aug-15</p>	<p>DATE: 15-Aug-15</p> <p>TITLE: ASSY, TRANSPORT WR31</p> <p>SIZE: D</p> <p>CAGE CODE: 08TP3</p> <p>DWG NO: 50001900-XX</p> <p>REV: 1P</p> <p>SCALE: 1:1</p> <p>DO NOT SCALE DRAWING</p> <p>SHEET: 1 OF 3</p>																

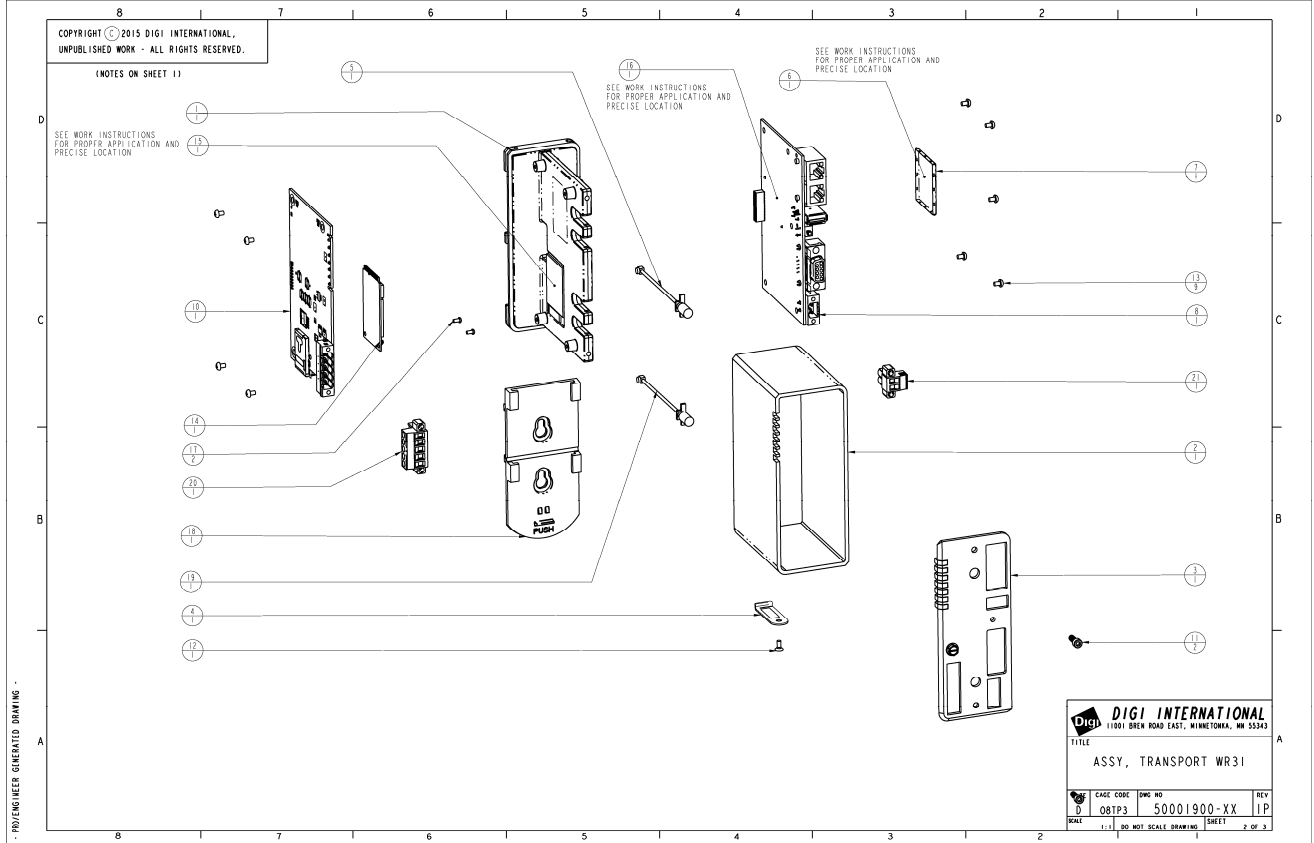


ISOMETRIC VIEW
FOR REFERENCE ONLY

IEC 62368-1

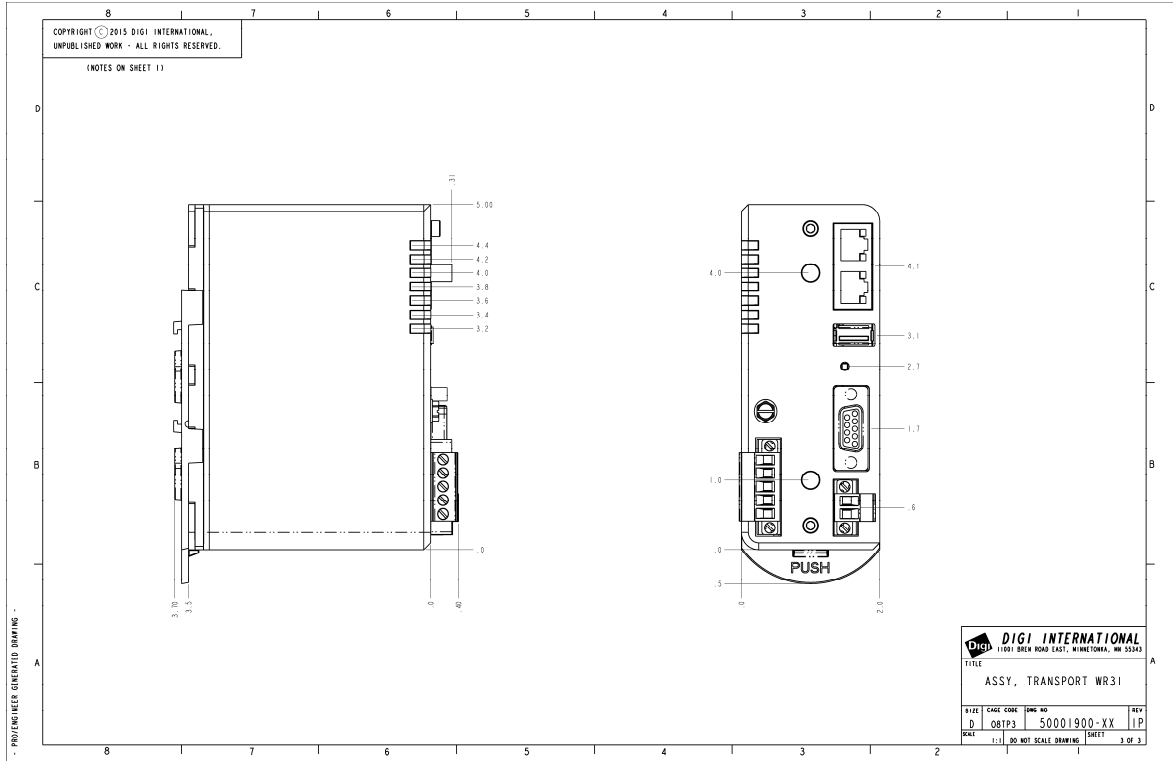
Clause	Requirement + Test	Result - Remark	Verdict
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Diagrams ID 4-04



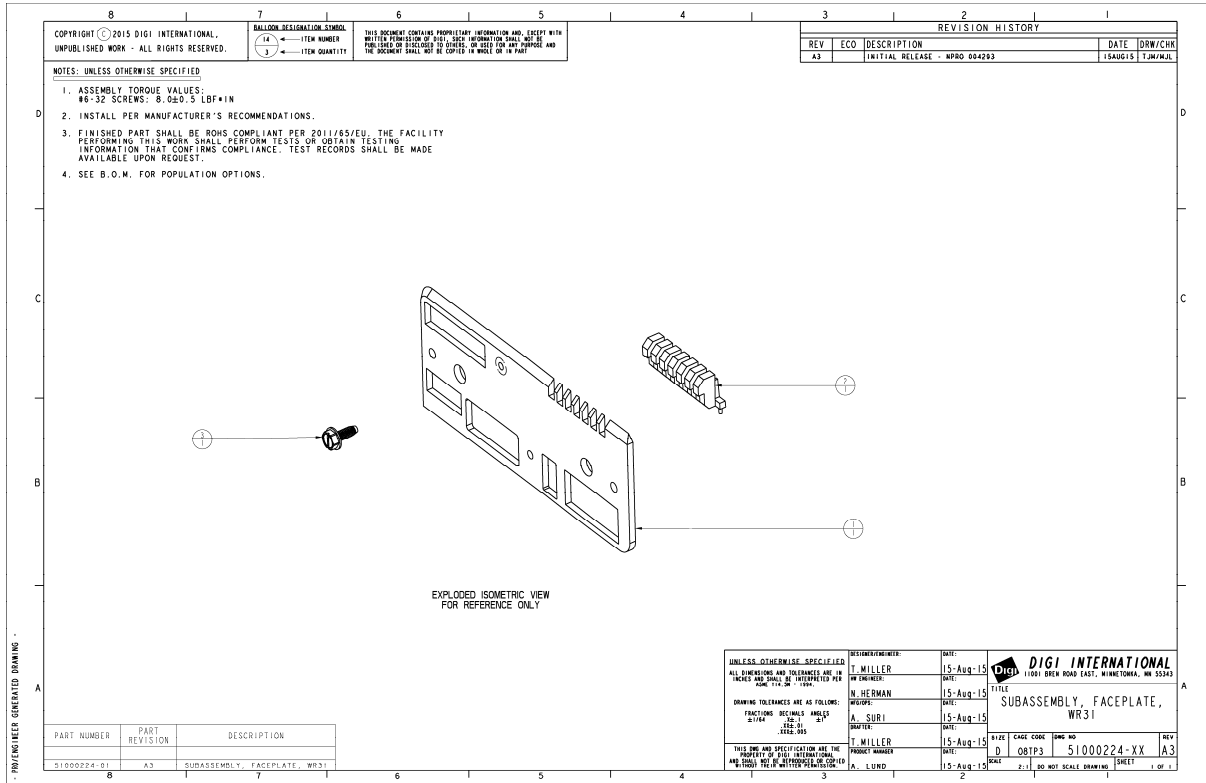
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Diagrams ID 4-04



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

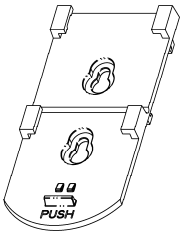
Diagrams ID 4-05



IEC 62368-1

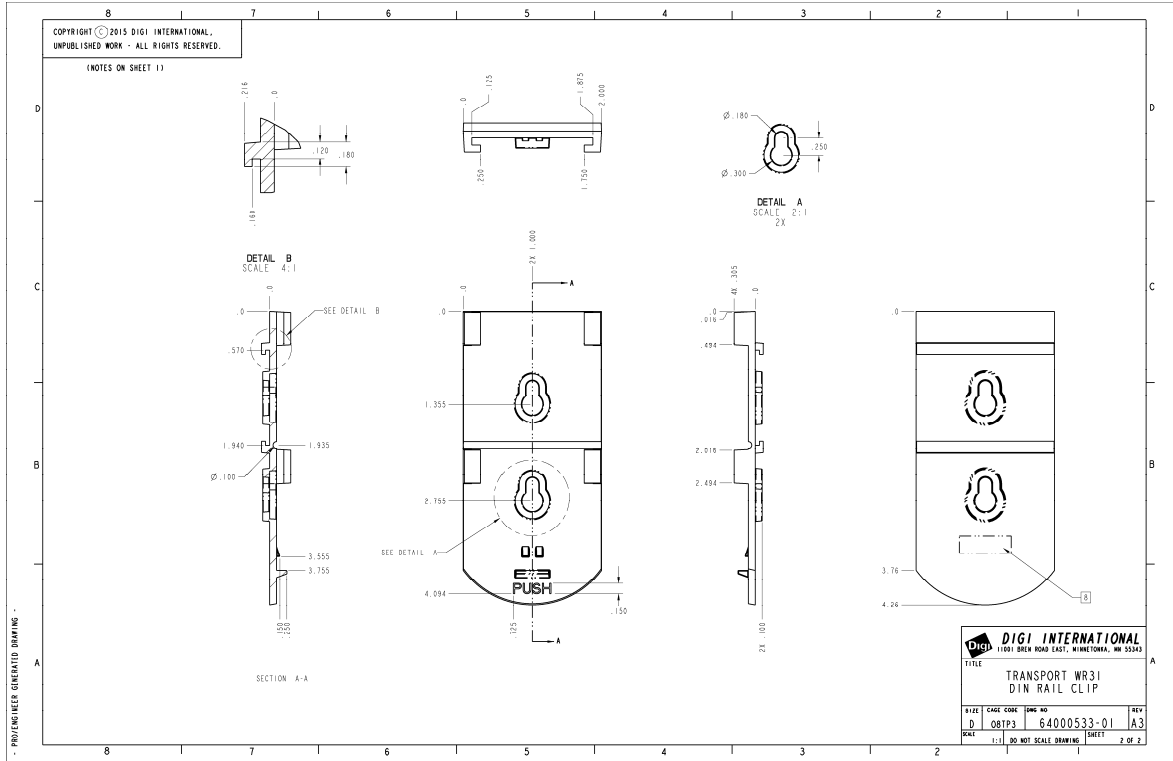
Clause	Requirement + Test	Result - Remark	Verdict
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Diagrams ID 4-06

8 7 6 5 4 3 2 1 D C B A A 1 2 3 4 5 6 7 8	COPYRIGHT © 2015 DIGI INTERNATIONAL. UNPUBLISHED WORK - ALL RIGHTS RESERVED. NOTES: UNLESS OTHERWISE SPECIFIED 1. MATERIAL: POLYPROPYLENE, FORMOSA POLYPROPYLENE YUNGSOX 5090T UL CLASSIFICATION: UL 94V0, UL FILE NUMBER E216959. COLOR: BLACK RAL 9002 MATCH COLOR AND INSPECT GLOSS PER DIGI WORK INSTRUCTION 9600064. MATERIAL REGRID IS NOT ALLOWED. 2. PARTING LINE MISMATCH SHALL NOT EXCEED .010". FLASH ALLOWANCE: .005" MAX GATE VESTIGE ALLOWANCE: .015" MAX. 3. SURFACE FINISH: TEXTURE SURFACES NOTED TO MOLD-TECH 11006. ALL OTHER SURFACES TO BE SPI C-2 OR BETTER. 4. PART SHALL MEET REQUIREMENTS OF DIGI COSMETIC FINISH SPECIFICATION P/W 9600063. 5. BEST ARTICLES SUBMITTED SHALL BE ACCOMPANIED WITH THE APPENDIX OF 9600063 FOR APPROVAL. 6. THE FOLLOWING APPLY TO DIMENSIONS NOT SHOWN: DIMENSIONS ARE PER DATABASE TOLERANCE OF .020" TO DATUM SYSTEM ABC. 7. DIMENSIONS OF FORM AND LOCATION APPLY TO PART IN AN UNRESTRAINED CONDITION. 8. ALL DRAFT ANGLES ARE PER DATABASE. 9. IDENTIFY PART WITH MOLDED-IN NUMBERS .125" TALL MINIMUM. RAYSCOP FROM THE PART SURFACE .005" MIN. IDENTIFICATION SHALL INCLUDE PART NUMBER, REVISION, MATERIAL CODE, VENDOR CODE, AND DATE OF MANUFACTURE USING A DATE WHEEL. LOCATE APPROXIMATELY AS SHOWN. 10. ALL EJECTOR PIN, VENT AND GATE LOCATIONS SHALL BE APPROVED BY DIGI INTERNATIONAL PRIOR TO TOOLING. EJECTOR PINS SHALL BE FLUSH TO .015" DEEP. 11. BEST MANUFACTURING PRACTICES SHALL BE USED TO MINIMIZE MOLDED-IN STRESSES AND PART WARPAGE. 12. FINISHED PART SHALL BE HOLD COMPLIANT PER 2011/63/EC. THE FACILITY PERFORMING THIS WORK SHALL PERFORM TESTS OR OBTAIN TESTING INFORMATION THAT CONFIRMS COMPLIANCE. TEST RECORDS SHALL BE MADE AVAILABLE UPON REQUEST. 13. ALL SHIPMENTS TO INCLUDE CERTIFICATE OF CONFORMANCE.	MILLION RESOLUTION SYMBOL (1) ← ITEM NUMBER (2) ← ITEM QUANTITY THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION AND DESIGN WITH RIGHTS RESERVED. ALL RIGHTS RESERVED. INFORMATION ON THIS DRAWING AND THE DOCUMENT SHALL NOT BE COPIED IN WHOLE OR IN PART FOR REPRODUCTION OR TRANSMISSION IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.	<table border="1"> <thead> <tr> <th colspan="4">REVISION HISTORY</th> </tr> <tr> <th>REV</th> <th>ECD</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>A3</td> <td></td> <td>INITIAL RELEASE NPRO 004293</td> <td>15-AUG-15</td> </tr> </tbody> </table>  <p>ISOMETRIC VIEW FOR REFERENCE ONLY</p> <table border="1"> <tr> <td>UNLESS OTHERWISE SPECIFIED</td> <td>DRAWING TOLERANCES ARE AS FOLLOWS: H/HA .005 H/HA .010 H/HA .015 H/HA .020 H/HA .030 H/HA .040 H/HA .050 H/HA .060 H/HA .070 H/HA .080 H/HA .090 H/HA .100 H/HA .120 H/HA .150 H/HA .200 H/HA .250 H/HA .300 H/HA .400 H/HA .500 H/HA .600 H/HA .700 H/HA .800 H/HA .900 H/HA 1.000</td> <td>DATE 15-AUG-15</td> <td>BY T. 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DIGI INTERNATIONAL 11001 BIRCH ROAD EAST, MINNETONKA, MN 55342	TITLE TRANSPORT WR31 DIN RAIL CLIP	DATE 15-AUG-15 BY T. MILLER	DATE 15-AUG-15 BY T. MILLER CHECK CODE 64000533-01 REV A3 1 OF 2																								


IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict



Diagrams ID 4-06




IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Diagrams ID 4-07




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PIN NO.	SYMBOL	MNEMONIC
5	A IN0	ANALOG INPUT 0
4	AGND	ANALOG RETURN
3	D100	DIGITAL 1/00
2	GND	DIGITAL RETURN
1	D101	DIGITAL 1/01



PIN NO.	SYMBOL	MNEMONIC
1	(+)	DC POWER INPUT
2	(-)	DC POWER RETURN

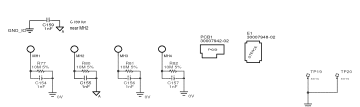
Warning - Do not connect/disconnect plugs while energized.
 Do not remove cover. No user serviceable parts.

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Schematics + PWB ID 5-01

	1	2	3	4	5	6	7	8	9	10	11	12
A	<p style="font-size: 24px; margin: 0;">BLOCK DIAGRAM GOES HERE</p>											A
B												B
C												C
D												D
E												E
F												F
G												G
H												H
I												I

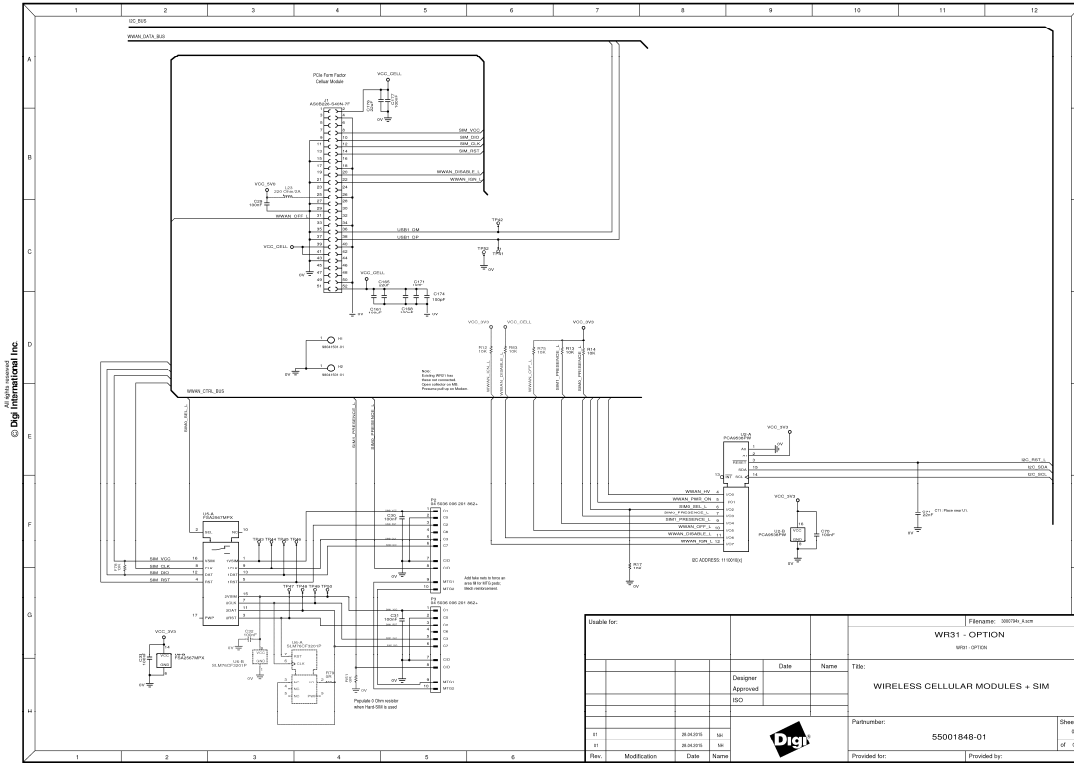


Date for:		Designer:		Date:		Name:		Title:	
		Approved:						WR31 - OPTION	
		RBO						Mechanicals	
								Patnumber:	
								55001849-01	
								Sheet	
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Rev:		Modification:		Date:		Name:		Provided for:	
								Provided by:	

IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
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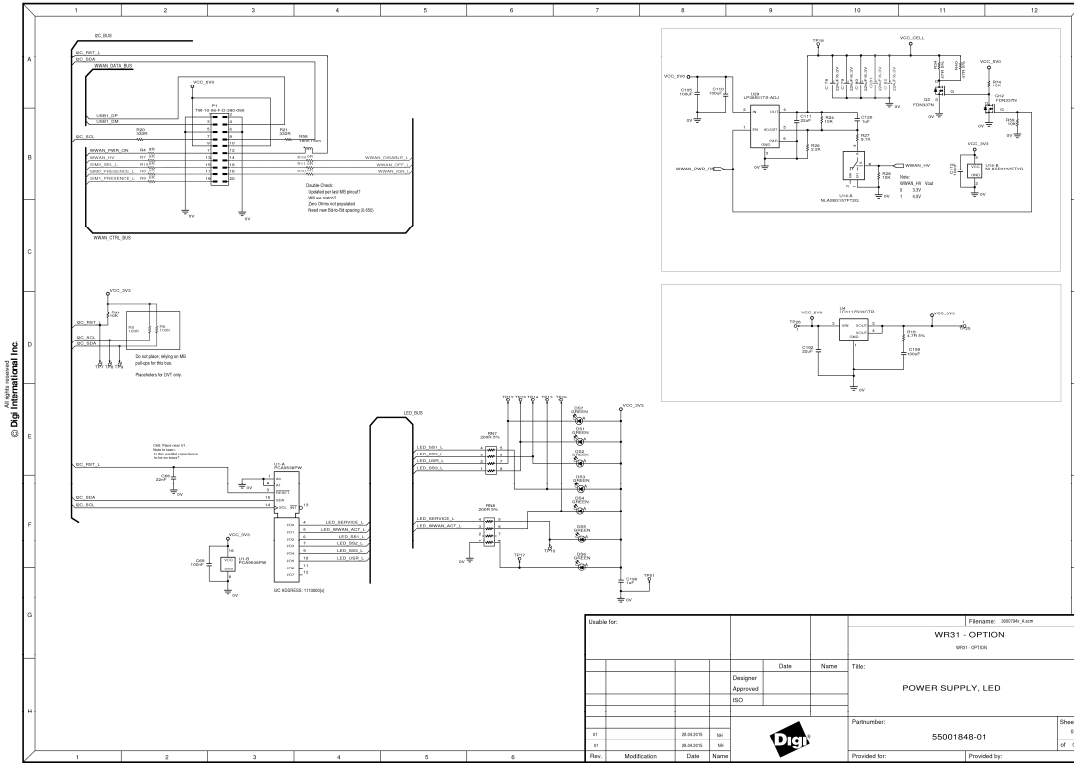
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IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
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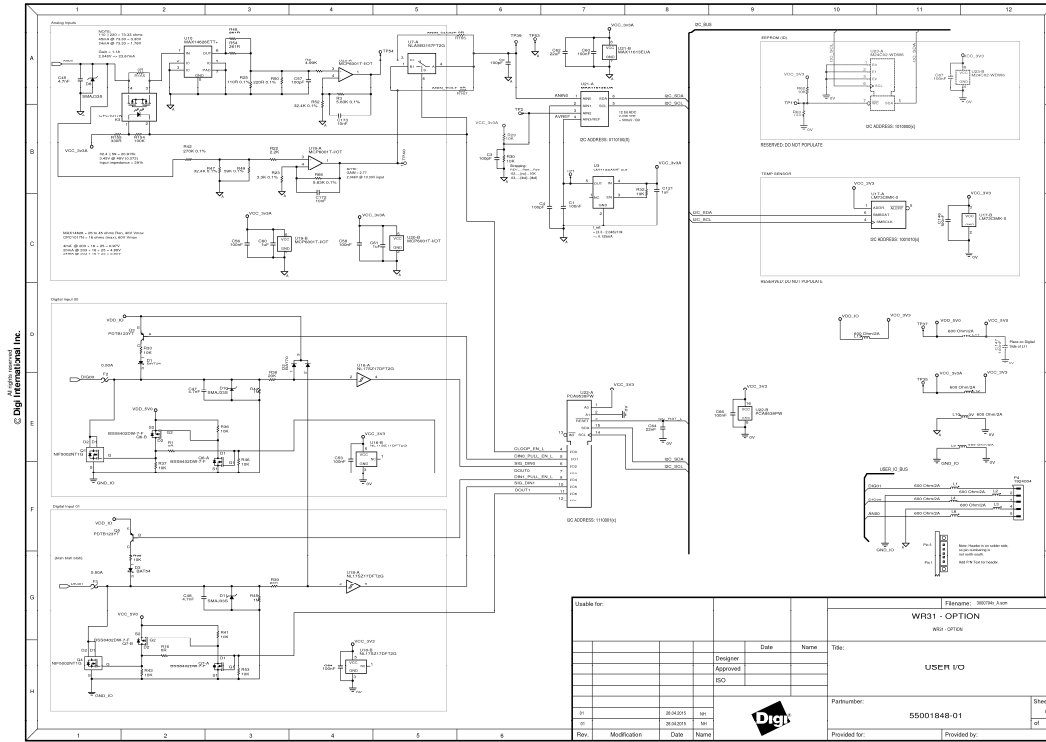
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IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
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Schematics + PWB ID 5-01



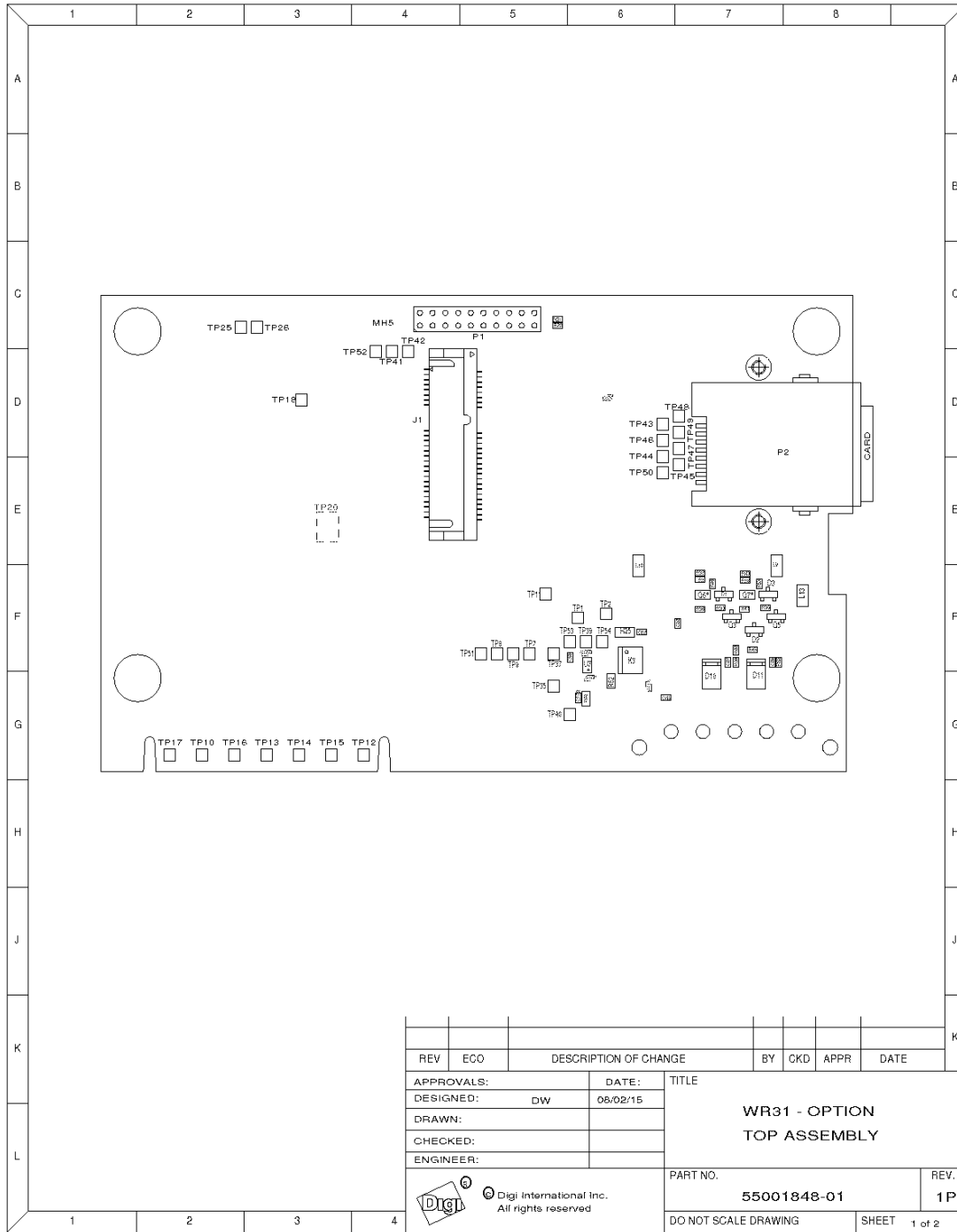
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict


Schematics + PWB ID 5-01

<p>HISTORY</p> <table border="1"> <thead> <tr> <th>Rev</th> <th>Date</th> <th>Variant</th> <th>Descriptions</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>25-APR-2015</td> <td>01</td> <td>-Initial Release</td> </tr> <tr> <td>01</td> <td>29-JUL-2015</td> <td>01</td> <td>-Release to IP, just DVT</td> </tr> </tbody> </table>	Rev	Date	Variant	Descriptions	001	25-APR-2015	01	-Initial Release	01	29-JUL-2015	01	-Release to IP, just DVT	<p>TABLE OF CONTENTS</p> <table border="1"> <thead> <tr> <th>Page</th> <th>Descriptions</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Mechanical Page</td> </tr> <tr> <td>1</td> <td>WIRELESS CELLULAR MODULES + SIM</td> </tr> <tr> <td>2</td> <td>POWER SUPPLY, LED</td> </tr> <tr> <td>3</td> <td>USER I/O</td> </tr> <tr> <td>4</td> <td>History and Notes</td> </tr> </tbody> </table>	Page	Descriptions	0	Mechanical Page	1	WIRELESS CELLULAR MODULES + SIM	2	POWER SUPPLY, LED	3	USER I/O	4	History and Notes	<p>I2C ADDRESSING</p> <table border="1"> <thead> <tr> 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<tr><td>T51</td><td>B151 (SIM LED)</td></tr> <tr><td>T52</td><td>B152 (User LED)</td></tr> <tr><td>T53</td><td>B153 (SIM LED)</td></tr> <tr><td>T54</td><td>B154 (User LED)</td></tr> <tr><td>T55</td><td>B155 (SIM LED)</td></tr> <tr><td>T56</td><td>B156 (User LED)</td></tr> <tr><td>T57</td><td>B157 (SIM LED)</td></tr> <tr><td>T58</td><td>B158 (User LED)</td></tr> <tr><td>T59</td><td>B159 (SIM LED)</td></tr> <tr><td>T60</td><td>B160 (User LED)</td></tr> <tr><td>T61</td><td>B161 (SIM LED)</td></tr> <tr><td>T62</td><td>B162 (User LED)</td></tr> <tr><td>T63</td><td>B163 (SIM LED)</td></tr> <tr><td>T64</td><td>B164 (User LED)</td></tr> <tr><td>T65</td><td>B165 (SIM LED)</td></tr> <tr><td>T66</td><td>B166 (User LED)</td></tr> <tr><td>T67</td><td>B167 (SIM LED)</td></tr> <tr><td>T68</td><td>B168 (User LED)</td></tr> <tr><td>T69</td><td>B169 (SIM LED)</td></tr> <tr><td>T70</td><td>B170 (User LED)</td></tr> <tr><td>T71</td><td>B171 (SIM LED)</td></tr> <tr><td>T72</td><td>B172 (User LED)</td></tr> <tr><td>T73</td><td>B173 (SIM LED)</td></tr> <tr><td>T74</td><td>B174 (User LED)</td></tr> <tr><td>T75</td><td>B175 (SIM LED)</td></tr> <tr><td>T76</td><td>B176 (User LED)</td></tr> <tr><td>T77</td><td>B177 (SIM LED)</td></tr> <tr><td>T78</td><td>B178 (User LED)</td></tr> <tr><td>T79</td><td>B179 (SIM LED)</td></tr> <tr><td>T80</td><td>B180 (User LED)</td></tr> <tr><td>T81</td><td>B181 (SIM LED)</td></tr> <tr><td>T82</td><td>B182 (User LED)</td></tr> <tr><td>T83</td><td>B183 (SIM LED)</td></tr> <tr><td>T84</td><td>B184 (User LED)</td></tr> <tr><td>T85</td><td>B185 (SIM LED)</td></tr> <tr><td>T86</td><td>B186 (User LED)</td></tr> <tr><td>T87</td><td>B187 (SIM LED)</td></tr> <tr><td>T88</td><td>B188 (User LED)</td></tr> <tr><td>T89</td><td>B189 (SIM LED)</td></tr> <tr><td>T90</td><td>B190 (User LED)</td></tr> <tr><td>T91</td><td>B191 (SIM LED)</td></tr> <tr><td>T92</td><td>B192 (User LED)</td></tr> <tr><td>T93</td><td>B193 (SIM LED)</td></tr> <tr><td>T94</td><td>B194 (User LED)</td></tr> <tr><td>T95</td><td>B195 (SIM LED)</td></tr> <tr><td>T96</td><td>B196 (User LED)</td></tr> <tr><td>T97</td><td>B197 (SIM LED)</td></tr> <tr><td>T98</td><td>B198 (User LED)</td></tr> <tr><td>T99</td><td>B199 (SIM LED)</td></tr> <tr><td>T100</td><td>B200 (User LED)</td></tr> </tbody> </table>	T1	AVDD	T2	B102 (Power LED)	T3	B103 (SIM LED)	T4	B104 (User LED)	T5	B105 (SIM LED)	T6	B106 (User LED)	T7	B107 (SIM LED)	T8	B108 (User LED)	T9	B109 (SIM LED)	T10	B110 (User LED)	T11	B111 (SIM LED)	T12	B112 (User LED)	T13	B113 (SIM LED)	T14	B114 (User LED)	T15	B115 (SIM LED)	T16	B116 (User LED)	T17	B117 (SIM LED)	T18	B118 (User LED)	T19	B119 (SIM LED)	T20	B120 (User LED)	T21	B121 (SIM LED)	T22	B122 (User LED)	T23	B123 (SIM LED)	T24	B124 (User LED)	T25	B125 (SIM LED)	T26	B126 (User LED)	T27	B127 (SIM LED)	T28	B128 (User LED)	T29	B129 (SIM LED)	T30	B130 (User LED)	T31	B131 (SIM LED)	T32	B132 (User LED)	T33	B133 (SIM LED)	T34	B134 (User LED)	T35	B135 (SIM LED)	T36	B136 (User LED)	T37	B137 (SIM LED)	T38	B138 (User LED)	T39	B139 (SIM LED)	T40	B140 (User LED)	T41	B141 (SIM LED)	T42	B142 (User LED)	T43	B143 (SIM LED)	T44	B144 (User LED)	T45	B145 (SIM LED)	T46	B146 (User LED)	T47	B147 (SIM LED)	T48	B148 (User LED)	T49	B149 (SIM LED)	T50	B150 (User LED)	T51	B151 (SIM LED)	T52	B152 (User LED)	T53	B153 (SIM LED)	T54	B154 (User LED)	T55	B155 (SIM LED)	T56	B156 (User LED)	T57	B157 (SIM LED)	T58	B158 (User LED)	T59	B159 (SIM LED)	T60	B160 (User LED)	T61	B161 (SIM LED)	T62	B162 (User LED)	T63	B163 (SIM LED)	T64	B164 (User LED)	T65	B165 (SIM LED)	T66	B166 (User LED)	T67	B167 (SIM LED)	T68	B168 (User LED)	T69	B169 (SIM LED)	T70	B170 (User LED)	T71	B171 (SIM LED)	T72	B172 (User LED)	T73	B173 (SIM LED)	T74	B174 (User LED)	T75	B175 (SIM LED)	T76	B176 (User LED)	T77	B177 (SIM LED)	T78	B178 (User LED)	T79	B179 (SIM LED)	T80	B180 (User LED)	T81	B181 (SIM LED)	T82	B182 (User LED)	T83	B183 (SIM LED)	T84	B184 (User LED)	T85	B185 (SIM LED)	T86	B186 (User LED)	T87	B187 (SIM LED)	T88	B188 (User LED)	T89	B189 (SIM LED)	T90	B190 (User LED)	T91	B191 (SIM LED)	T92	B192 (User LED)	T93	B193 (SIM LED)	T94	B194 (User LED)	T95	B195 (SIM LED)	T96	B196 (User LED)	T97	B197 (SIM LED)	T98	B198 (User LED)	T99	B199 (SIM LED)	T100	B200 (User LED)	<table border="1"> <tr> <td>Valid for:</td> <td></td> <td>Filename: 5501848_1.rvt</td> </tr> <tr> <td></td> <td></td> <td>WR311 - OPTION</td> </tr> <tr> <td></td> <td></td> <td>WB1-010N</td> </tr> <tr> <td></td> <td></td> <td>History</td> </tr> <tr> <td></td> <td></td> <td>Platnumber: 5501848-01</td> </tr> <tr> <td></td> <td></td> <td>Sheet 04</td> </tr> <tr> <td></td> <td></td> <td>of 04</td> </tr> <tr> <td>Rev</td> <td>Modification</td> <td>Date</td> <td>Name</td> <td>Designer</td> <td>Approved</td> <td>ISO</td> <td>Platnumber:</td> <td>Sheet</td> </tr> <tr> <td>01</td> <td></td> <td>25-APR-2015</td> <td>sh</td> <td></td> <td></td> <td></td> <td>5501848-01</td> <td>04</td> </tr> <tr> <td>02</td> <td></td> <td>29-JUL-2015</td> <td>sh</td> <td></td> <td></td> <td></td> <td></td> <td>04</td> </tr> <tr> <td>Rev</td> <td>Modification</td> <td>Date</td> <td>Name</td> <td>Designer</td> <td>Approved</td> <td>ISO</td> <td>Platnumber:</td> <td>Sheet</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Valid for:		Filename: 5501848_1.rvt			WR311 - OPTION			WB1-010N			History			Platnumber: 5501848-01			Sheet 04			of 04	Rev	Modification	Date	Name	Designer	Approved	ISO	Platnumber:	Sheet	01		25-APR-2015	sh				5501848-01	04	02		29-JUL-2015	sh					04	Rev	Modification	Date	Name	Designer	Approved	ISO	Platnumber:	Sheet									
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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

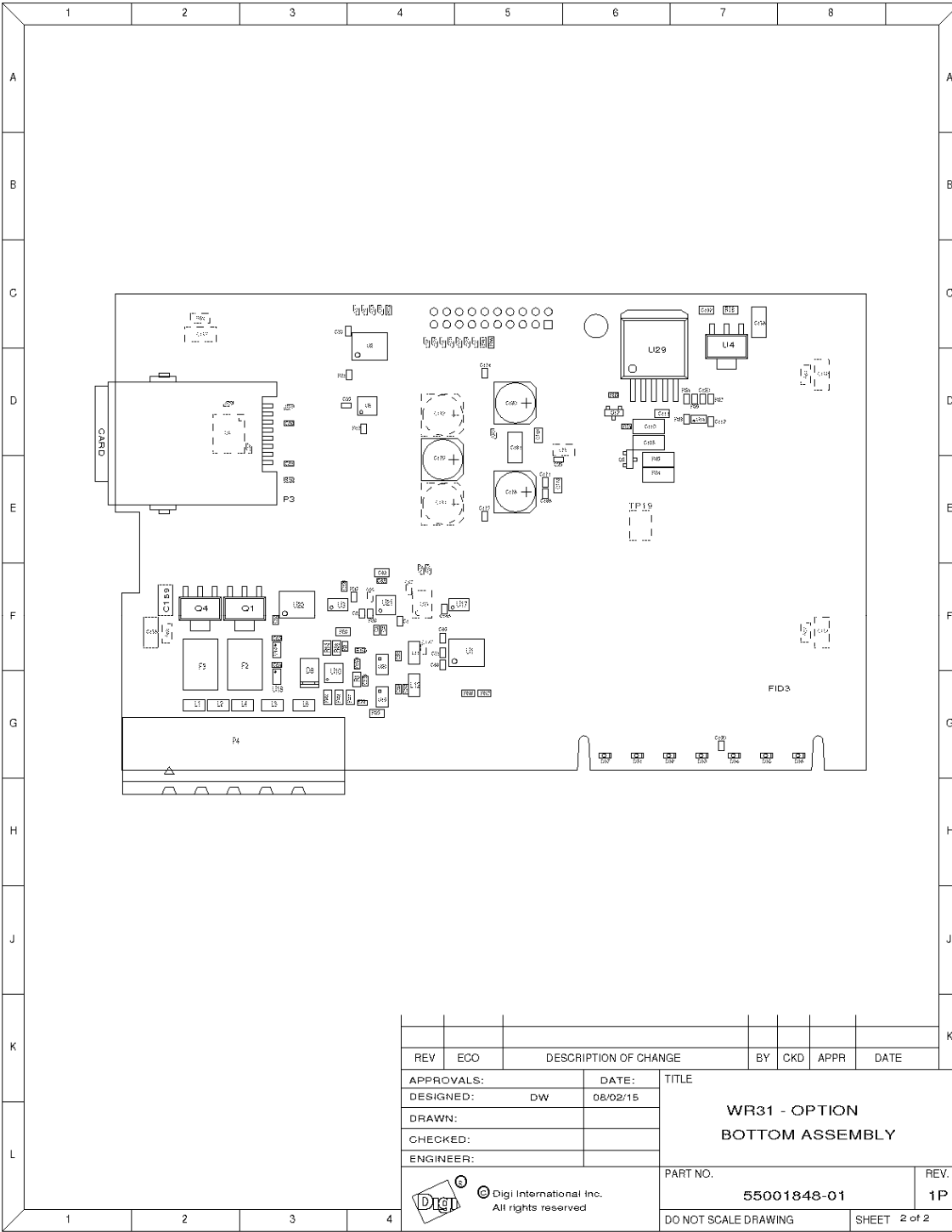
Schematics + PWB ID 5-01



REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED: DW		06/02/15	WR31 - OPTION TOP ASSEMBLY			
DRAWN:						
CHECKED:						
ENGINEER:						
 Digi International Inc. All rights reserved			PART NO.		REV.	
			55001848-01		1P	
DO NOT SCALE DRAWING					SHEET 1 of 2	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Schematics + PWB ID 5-01

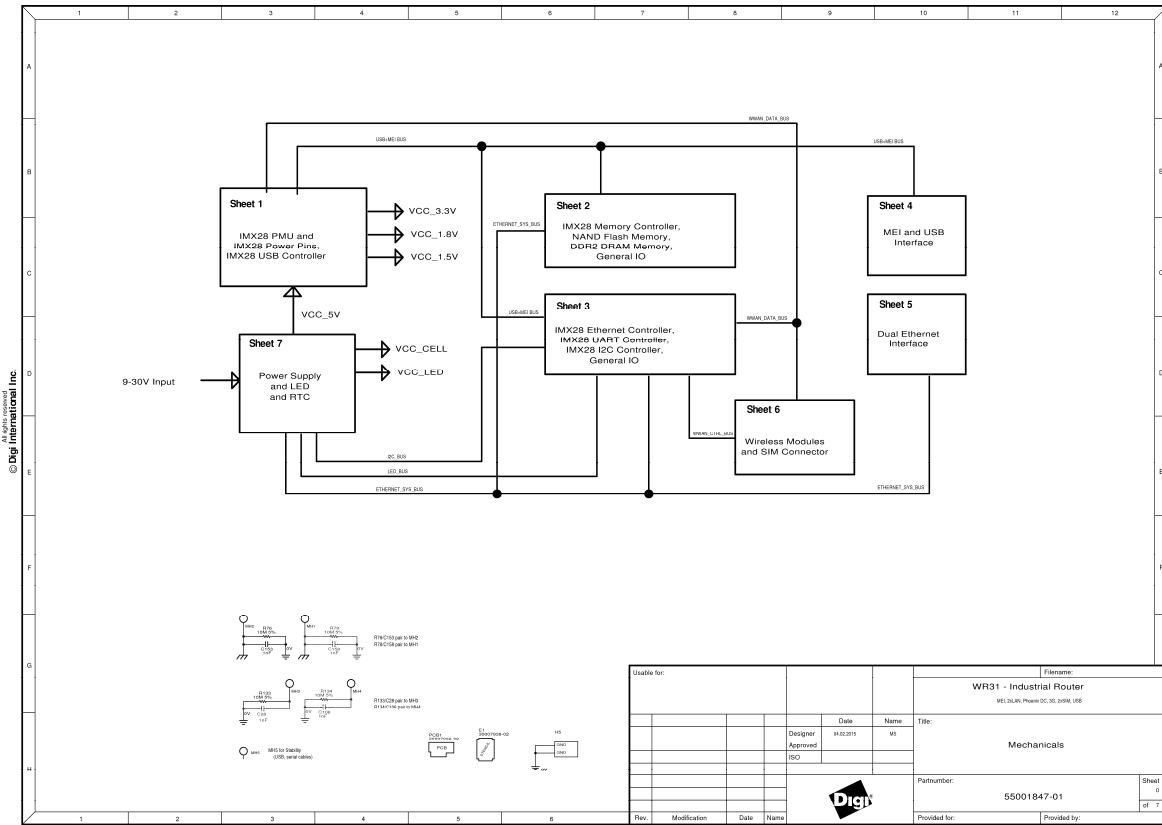


REV	ECO	DESCRIPTION OF CHANGE	BY	CKD	APPR	DATE
APPROVALS:		DATE:	TITLE			
DESIGNED: DW		08/02/15	WR31 - OPTION BOTTOM ASSEMBLY			
DRAWN:						
CHECKED:						
ENGINEER:						
PART NO.		REV.				
55001848-01		1P				
DO NOT SCALE DRAWING						SHEET 2 of 2

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Schematics + PWB ID 5-02

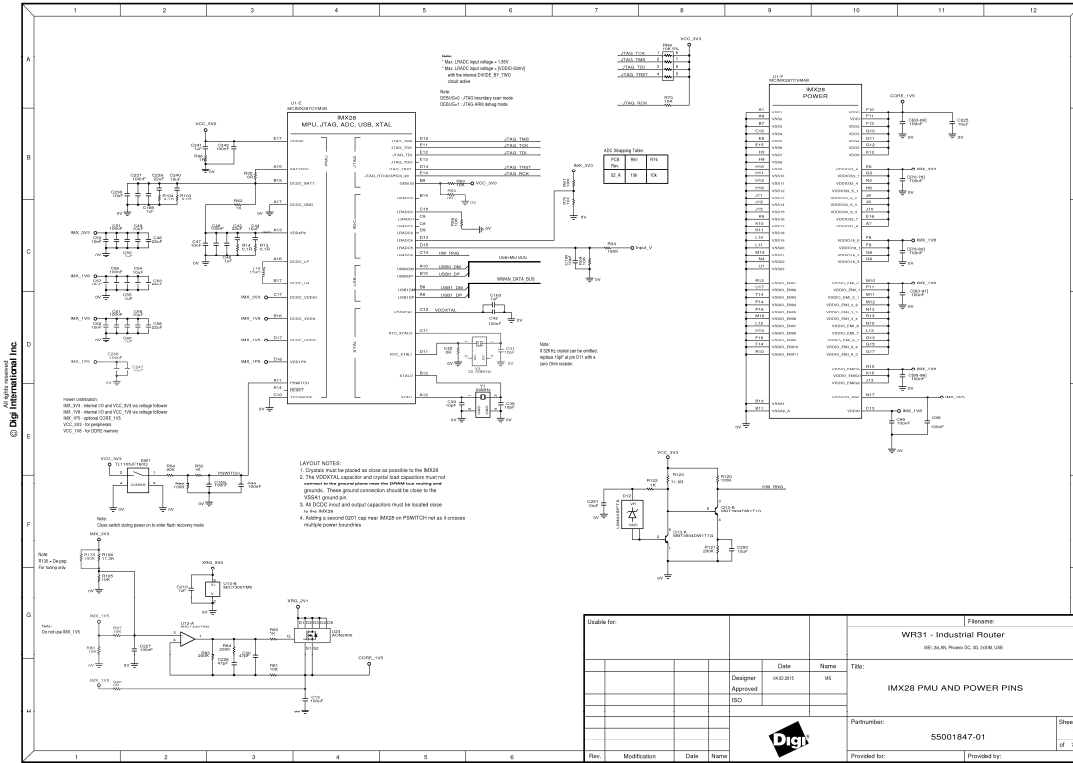


Usable for:		Date:		Name:		Title:	
		14.02.2015		WS		WR31 - Industrial Router	
Designer:		Approved:		Partnumber:		Sheet:	
ISO				55001847-01		01 of 7	
Rev.:		Modification:		Date:		Name:	

IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
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Schematics + PWB ID 5-02

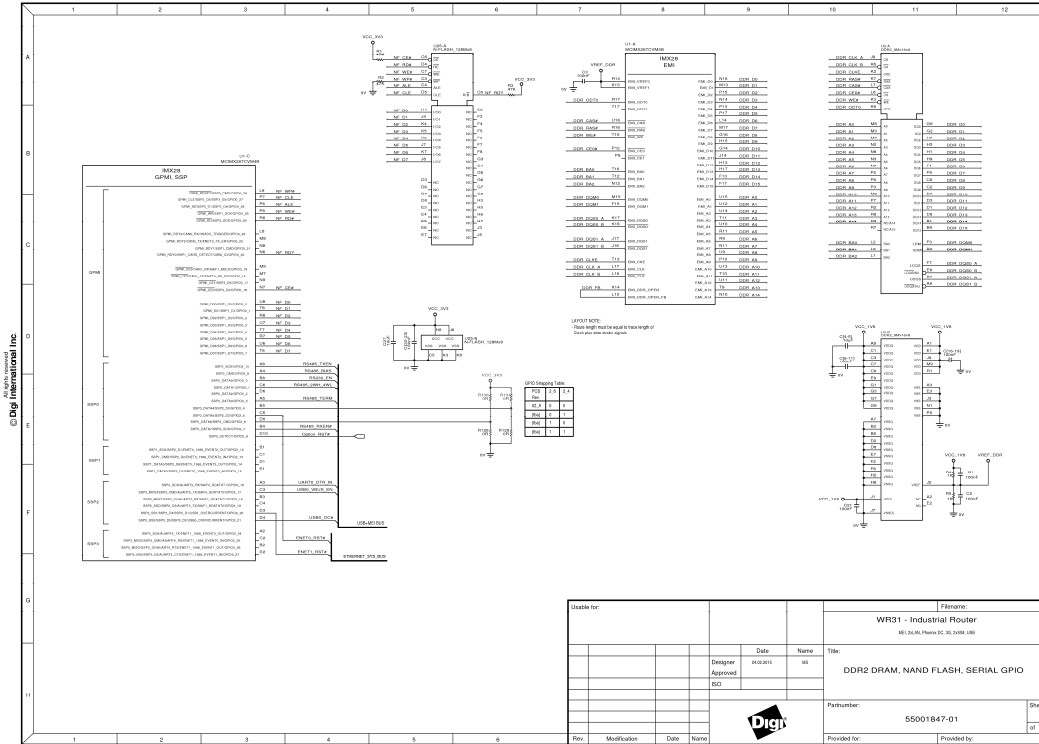


Issued for:				Filename:	
				WR31 - Industrial Router	
				HEL, 24VDC Power DC, 30, 24VDC, USB	
				IMX28 PMU AND POWER PINS	
				Partnumber: 55001647-01	
				Sheet 1 of 7	
				Provided for: Provided by:	

IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
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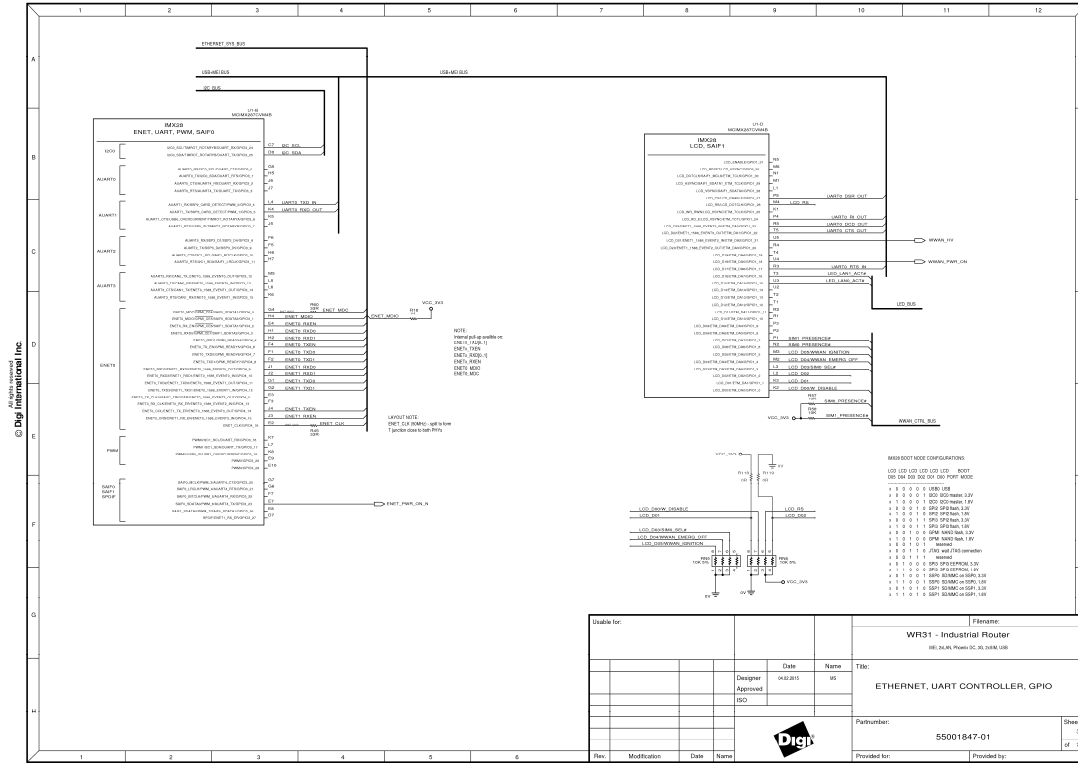
Schematics + PWB ID 5-02



IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
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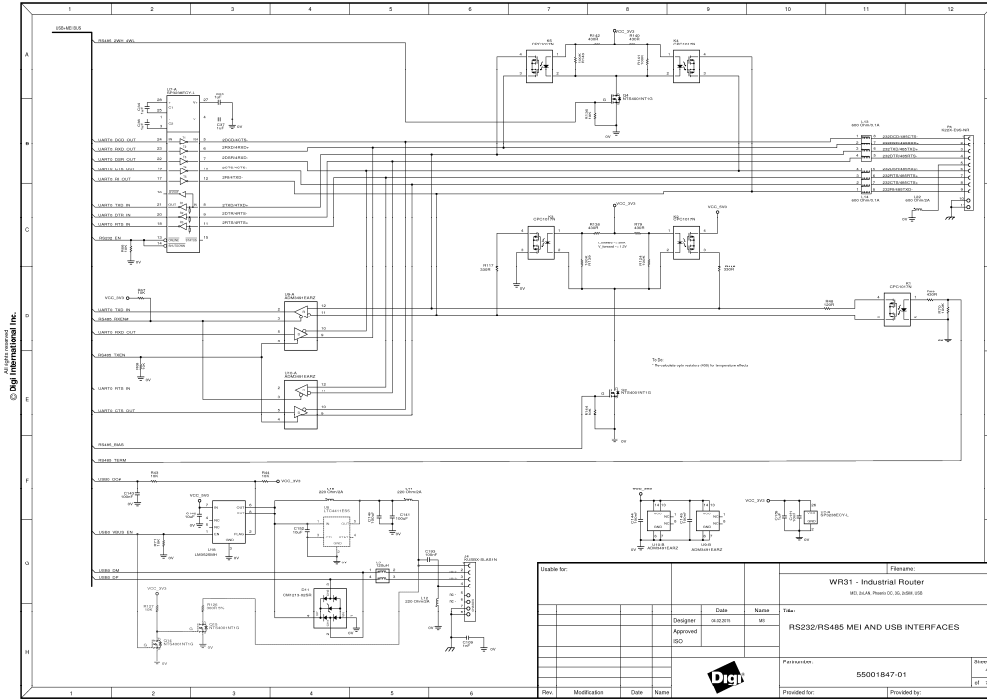
Schematics + PWB ID 5-02



IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
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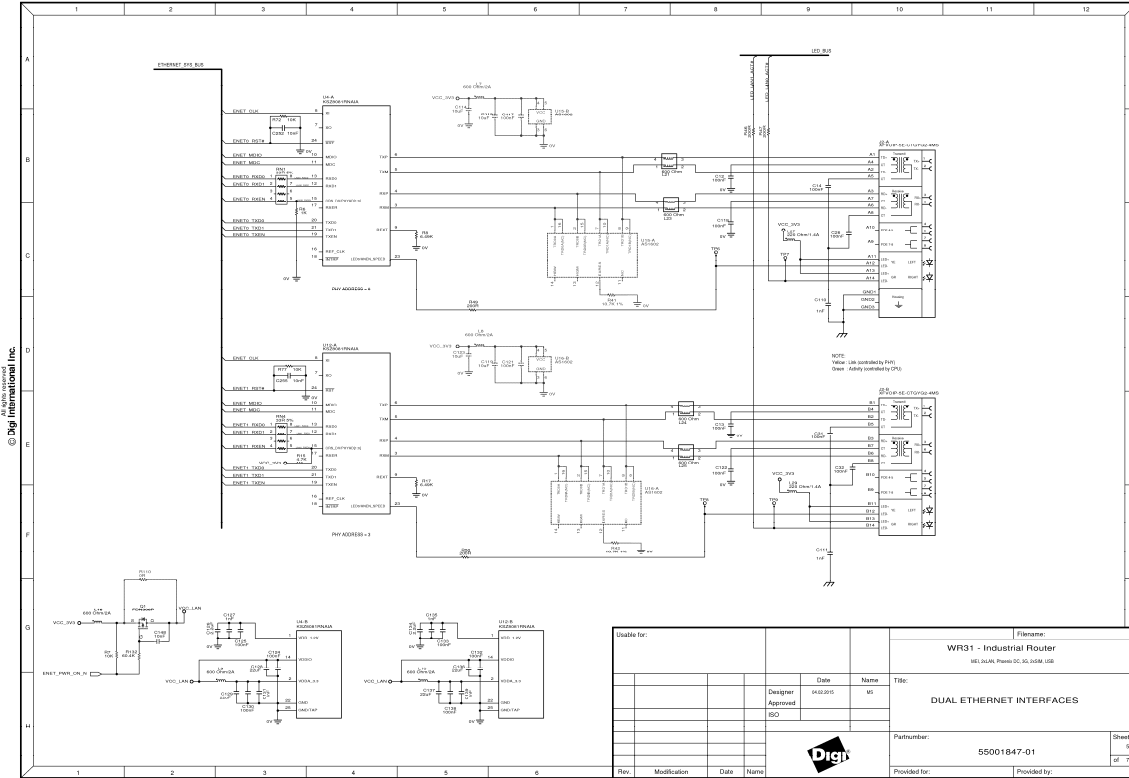
Schematics + PWB ID 5-02



IEC 62368-1

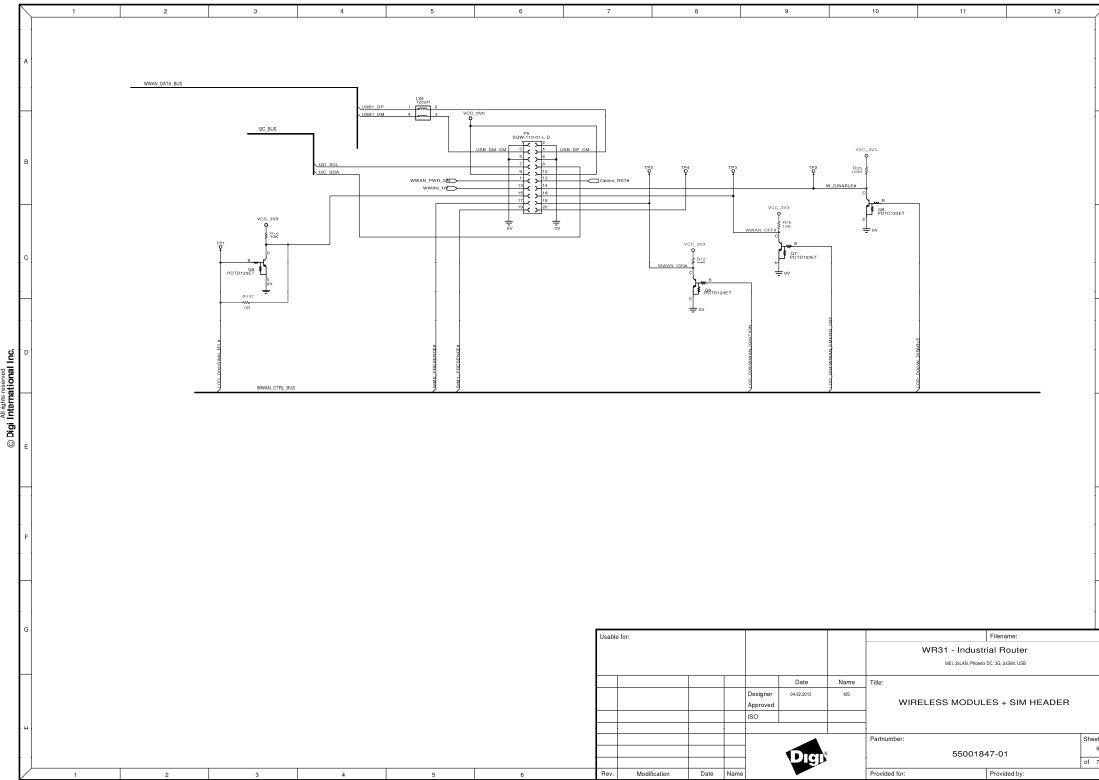
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Schematics + PWB ID 5-02



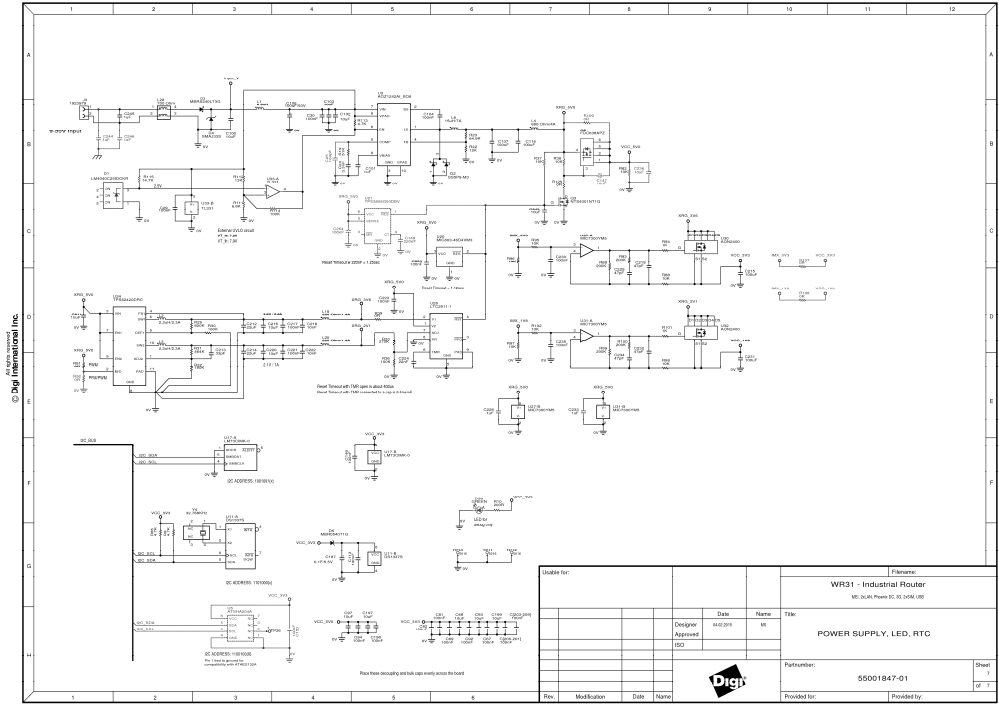
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Clause	Requirement + Test	Result - Remark	Verdict

Schematics + PWB ID 5-02



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Schematics + PWB ID 5-02



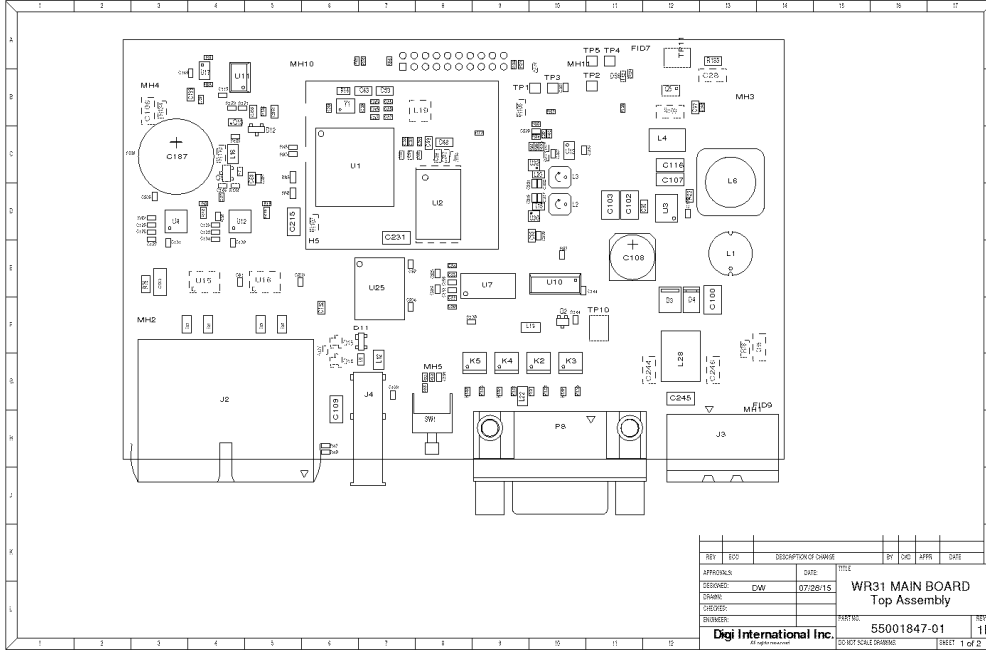
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Schematics + PWB ID 5-02

<p>HISTORY</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Rev</th> <th>Date</th> <th>Version</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>02 April 2012</td> <td>01</td> <td>Modify existing WPC1 (000011) CD design to fit BFD requirements. New board power supply, LED, 7-pin connector. Add power pin directly to board board header. Change to reflect BFD connector. Add pull-up resistor, add DVI5 connector. 2-pin power connector.</td> </tr> </tbody> </table>	Rev	Date	Version	Description	001	02 April 2012	01	Modify existing WPC1 (000011) CD design to fit BFD requirements. New board power supply, LED, 7-pin connector. Add power pin directly to board board header. Change to reflect BFD connector. Add pull-up resistor, add DVI5 connector. 2-pin power connector.	<p>TABLE OF CONTENTS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Page</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Mechanical Page</td> </tr> <tr> <td>1</td> <td>IMX28 PMU AND POWER PINS</td> </tr> <tr> <td>2</td> <td>DDR2 DRAM, NAND FLASH, SERIAL GPIO</td> </tr> <tr> <td>3</td> <td>ETHERNET, UART CONTROLLER, GPIO</td> </tr> <tr> <td>4</td> <td>RIS32 / RIS465 MEI AND USB INTERFACES</td> </tr> <tr> <td>5</td> <td>DUAL ETHERNET INTERFACES</td> </tr> <tr> <td>6</td> <td>WIRELESS CELLULAR MODULES + SIM Header</td> </tr> <tr> <td>7</td> <td>POWER SUPPLY, LED, RTC</td> </tr> </tbody> </table>	Page	Description	0	Mechanical Page	1	IMX28 PMU AND POWER PINS	2	DDR2 DRAM, NAND FLASH, SERIAL GPIO	3	ETHERNET, UART CONTROLLER, GPIO	4	RIS32 / RIS465 MEI AND USB INTERFACES	5	DUAL ETHERNET INTERFACES	6	WIRELESS CELLULAR MODULES + SIM Header	7	POWER SUPPLY, LED, RTC
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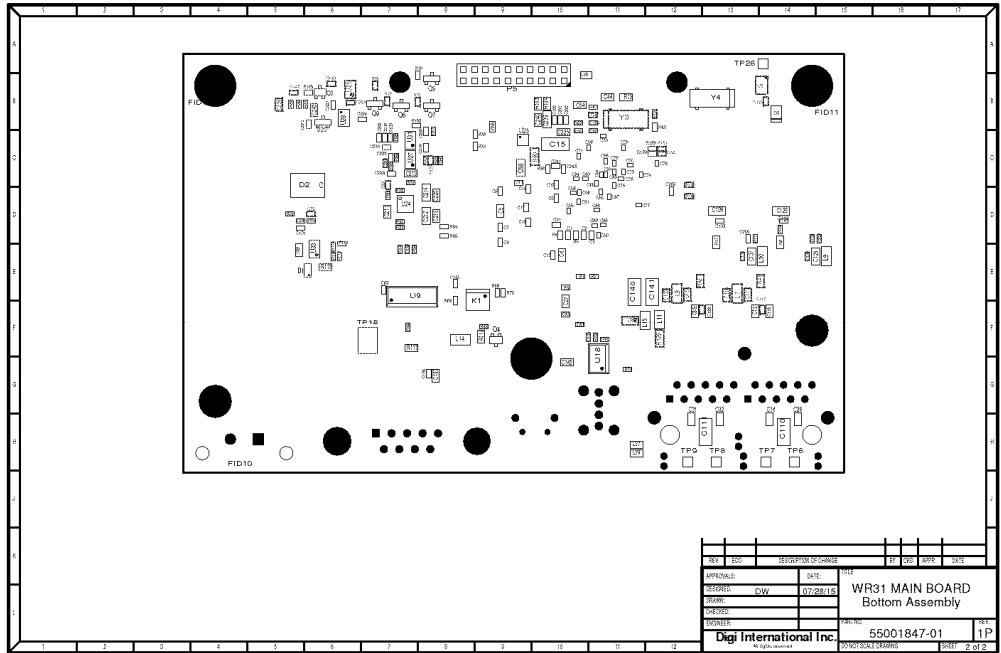
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Schematics + PWB ID 5-02



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Schematics + PWB ID 5-02



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Manuals ID 6-01

1 What's in the box

TransPort WR31

Required additional equipment

- Power Supply
- Ethernet Cable
- Cellular Antenna(s) - type SMA orderable on digi.com (Digi part number 76000793)
- Phillips-head screwdriver
- Flat-head screwdriver

Optional equipment

- Quick Start Guide
- Barcode: 9001465-88 A

Required additional equipment

- SIM card(s) - Mini-SIM (2FF) size
- A personal computer

If any item is missing or damaged, please contact your supplier. Note any damage that may have occurred during shipping and report it to the supplier.

2 Connect the hardware

- Using the Phillips-head screwdriver, remove the SIM slot cover.
- Insert SIM card(s) into SIM sockets. SIM 1 is to the middle of the unit. SIM 2 is toward the outside of the unit. The end of the SIM card with the chamfered corner should be inserted first.
- Replace the SIM slot cover.
- Connect the cellular antenna to the **WWAN PRI** connector on the unit. If the unit is equipped with a secondary cellular antenna connector, connect it to the **WWAN SEC** connector.
- Connect one end of the Ethernet cable to the **LAN 0** port on the unit and the other end to a LAN port on a PC.
- Connect the power supply. Remove the pluggable connector from the unit and screw-down a proper power source to its terminals. Once complete, reconnect the pluggable connector to the unit, following the pin-out diagram below.

PRELIMINARY

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Manuals ID 6-01

2 Connect the hardware (continued)

g Mount the TransPort WR31 on a DIN rail or directly onto the wall.
 For DIN rail mounting:
 - Push the DIN clip down.
 - Slide the DIN clip over and off the unit.
 - Snap the DIN clip onto the DIN rail.
 - Align the unit with the DIN clip, following the guides on the unit, and slide the unit into the DIN clip.

Mounting Tips:
 - Position the Digi TransPort WR31 via DIN rail mounting brackets, wall-mount, or rackmount, or in a location with adequate ventilation.
 - The unit is designed for indoor use.
 - Do not expose the unit to extremes of heat or cold, strong magnetic fields, or liquids.

h When the unit is powered-up, the **POWER LED** will illuminate and the unit will initiate a series of diagnostic self-tests. During this process one or more of the other indicators will flash to show that the unit is busy. When the flashing stops, the unit has completed its self-test diagnostics and is ready to be configured.

3 Run the Getting Started Wizard

a If your PC is configured to automatically get an IP address, it can get an IP address from the TransPort WR31. Otherwise, make sure your PC can connect to the network 192.168.1.0 (5.255.255.0).

b Enter 192.168.1.1 into the address bar of the browser.

c The first page of the Getting Started Wizard displays. The wizard guides you through initial configuration for your TransPort device.
Note: The default username and password to log in to the TransPort device are **username** and **password**.
 - To run the wizard, click **Get Started**.
 - To manually configure the TransPort device, click **Skip Wizard**.

4 View the TransPort LEDs and startup states

- POWER LED**
 Off: No power
 Green: TransPort device is powered
- SERVICE LED:**
 Off: No WWAN network connection
 Green: WWAN network connection
 Flashing: WWAN traffic being transmitted or received
- WWAN LED:** Indicates the presence and level of cellular service running on the device.
 Off: No cellular service
 1 Blink: GPRS mode
 2 Blinks: EDGE mode
 3 Blinks: UMTS mode
 4 Blinks: HSDPA mode
 5 Blinks: HSUPA mode
 6 Blinks: LTE mode
- SIGNAL LEDs:** Indicate strength of cellular signal.
 3 LEDs: Excellent
 2 LEDs: Good
 1 LED: Fair
 0 LEDs: Poor or No signal
- USER LED:** Reserved for user-defined functions.

5 Next steps

After the Getting Started Wizard completes, the TransPort web interface is displayed. For additional configuration, use the web interface and refer to the *Digi TransPort User Guide* and *Application Notes* provided on the TransPort Documentation page on the Digi website (www.digi.com/support).

Miscellaneous ID 7-05



**Digi International 11001
Bren Road East
Minnetonka, MN. 55343
952-912-3444 tel
952-912-4991 central fax**

UL LLC

Subject: National Differences

September 8, 2015

Dear UL,

This document confirms that Digi International, Inc., will provide the following items needed to the accepting NCB along with the CB test report.

Markings and Safety Instructions - Safety instructions and markings in the language suitable for countries listed in the attached report will be provided at the time the CB test report is submitted to the accepting NCB.

EMC Test Report – Where detailed in the National Differences, an EMC Test report or Declaration of Conformity will accompany this product when sent to countries that require EMC test results as part of their certification process e.g. Korea.

We confirm that:

Power Supply Cords and Plugs - All power cords and plug assemblies provided with the unit will be certified and suitable for use in the countries listed in the attached CB test report.

Batteries – Upon shipment of products to Switzerland, the requirements of the most up-to-date Swiss Ordinance Annex 2.15, Batteries of SR 814.81 will be met including provision of the necessary markings, documents, and annual reports relative to the disposal of the batteries to the Swiss Authorities.

Restricted Substances – We declare, under our sole responsibility, that our products are in conformity with the requirements of Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).

Digi International, Inc declares that the sample submitted for evaluation is representative of the products from each factory.

A handwritten signature in black ink, appearing to read "Michael Mothershed Sr.", written in a cursive style.

Michael Mothershed Sr.
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Minnetonka, MN. 55343
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Ph: 952-912-3059