UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Information Technology Equipment Including Electrical Business Equipment
CCN:	NWGQ, NWGQ7
Product:	L2 Fast Ethernet Standalone Switch
Model:	ECS3510-26T
Rating:	100-240Vac, 50-60Hz, 0.3A
Applicant Name and Address:	ACCTON TECHNOLOGY CORP 1 CREATION 3RD RD SCIENCE-BASED INDUSTRIAL PARK HSINCHU 300 TAIWAN

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of Underwriters Laboratories Inc. ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.

Prepared by: Jimmy Tsao
Underwriters Laboratories Inc.

Reviewed by: Rick Li
Underwriters Laboratories Inc.

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.

ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.

iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

- Consists of a Certificated build-in PSU, electric components mounted on PWB, then all housed in a metal of bottom and cover for enclosure, then secured together by screws.

Model ECS3510-26T unit included RJ-45 ports x 26 ports, SFP ports x 4, console ports x 1.

Model Differences

N/A

Technical Considerations

- Equipment mobility : movable
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : operator accessible
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +6%, -10%
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class I (earthed)

- Considered current rating (A) : 20 A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : up to 2000m
- Altitude of test laboratory (m) : Below 2000m
- Mass of equipment (kg) : 1.76 Kg
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50 degree C
- The means of connection to the mains supply is: Pluggable A, Detachable power cord
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: Appliance inlet,
- The class of laser product is: Class 1 (I)
- The product was investigated to the following additional standards: EN 60950-1:2005 + A11:2009 (which includes all European national differences, including those specified in this test report).
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): RJ45 Ports (Transfer electrical singal) and Optical Transceiver (Transfer optical singal) based on circuit diagrams, functions, features, characteristics analysis and connector overload meausrement results.
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- The power supply in this equipment was: Investigated to an earlier edition/amendment of IEC/UL 60950-1, 1st edition. As part of the investigation of this product, the power supply and its test report were reviewed and found to comply with IEC/UL 60950-1, 2nd edition.

Additional Information

- The label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.

- This report has been to amendment, due to upgrade IEC/ EN standard to IEC 60950-1:2005; 2nd Edition /

EN 60950-1:2006+A11: 2009.

- Only limited tests were performed on model ECS3510-26T because of similarity in construction to Model ES-3026 , see Report no. E141136-A194-CB previously evaluated unit. Except for metal shape and model designation.

Markings and instructions

Clause Title	Marking or Instruction Details
Inter-connecting cables - External detachable	Listee's Name and Part number (Marking or Instruction)
Safety Instructions - Rack Mount	"Rack Mount Instructions - The following or similar rack-mount instructions are included with the installation instructions: A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer. B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised. C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading. D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern. E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Telecom type connectors not used for telecommunication purposes	For telecommunication type connectors and terminals not used for connection to the telecommunication network should be provided with a marking identifying the specific function or circuit characteristic the connector or terminal is

	used for Connector RJ45.
Service Manual	See enclosure 6-01

Special Instructions to UL Representative

N/A

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
--	--	--	--	--	--	--

Earthing Continuity Test Exemptions - This test is not required for the following models:

--

Electric Strength Test Exemptions - This test is not required for the following models:

--

Electric Strength Test Component Exemptions - The following solid-state components may disconnected from the remainder of the circuitry during the performance of this test:

--

Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
--	--	--	--	--	--

TABLE: List of Critical Components

Object/part No.	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
01. Power supply Cord (Optional)	--	--	Maximum 4.5m and Minimum 1.5m, long, Type SJT, SVT or SPT-2, 18 AWG. One end terminates in NEMA 5-15P with min. 125Vac, 10A,the other end with an appliance coupler.	ELBZ	UL
02. Enclosure Material	--	--	Steel, 0.6 mm minimum thickness, see enclosure ID7-01 and 7-02 for the details.	--	--
03. Power supply unit	Universal Micro electronics Co.,Ltd	UP0131A-05	Input: 100-240Vac; 47-63Hz; 0.4A. Output : 5Vdc,3 A	QQGQ2, QQGQ8	UL
04. AC Inlet	Rong Feng Industrial Co Ltd	SS-120	250Vac, 10A	AXUT2	UL
05. AC Connector	Jowle Technology Co Ltd	A3961H02-3P	250Vac, 5A	ECBT2	UL
05a. AC Connector (Alternate)	WELI SHENG TERMINAL INDUSTRIAL CO LTD	PX-I39601	250V,7A	ECBT2	UL
06. Wiring, internal (Primary)	--	--	VW-1 or FT-1, minimum 300Vac, 18AWG, minimum 80 degree C.	AVLV2	UL
07. Printed wiring board	--	--	Minimum V-1, 105 degree C	ZPMV2	UL
08. Connectors and Receptacles (secondary ELV/SELV circuits)	--	RJ-45, console port,	27 ports Provided (including console port) Copper alloy pins housed in bodies of plastic rated V-2 min.	DUXR2	UL
08a. Connectors and Receptacles (secondary ELV/SELV circuits) (Alternate)	--	Optical fiber port	2 provided	--	--
09. Internal Plastic Part Materials	--	--	min V-2.	QMFZ2	UL
10. Wiring, internal (secondary ELV/SELV circuits)	--	--	VW-1 or FT-1; min 30 V, 50 degee C.	AVLV2	UL
10a. Wiring, internal (secondary ELV/SELV circuits) (Alternate)	--	--	FEP, PTFE, PVC, TFE, neoprene, polyimide	--	--

Object/part No.	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
11. Earthing and Bonding	--	--	Min. No. 18 AWG, insulated with green/yellow color, one end mechanically secured and soldered to the ground pin of the Appliance Inlet, the other end terminated in a doublecrimped closed-loop or spade type terminal and secured to metal chassis/frame by a screw with engaged two complete threads and a star washer.	AVLV2	UL
12. Insulating Tubing/Sleeving	--	--	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1.	UZFT2, YDPU2, YDTU2	UL
13. Insulation sheet (between Power supply and metal chassis)	Sabic Innovative Plastics Chian CO.LTD.	FR1	94VTM-0,min 0.25mm thickness, see enclosure ID7-04 for the details.	QMFZ2	UL
14. Interconnecting cables (Optional)	--	--	Minimum 50 degree C, 30 V, maximum 3.05 m long, VW-1 or FT-1.	AVLV2	UL
14a. Interconnecting cables (Optional) (Alternate)	--	--	CMR, CMG, CM. CMX. CMUC or CMH.	DUZX	UL
15. Optical Transceiver (Optional)	--	--	Laser Class I, 3.3 Vdc.	NWGQ2	UL
16. Label	--	--	--	PGDQ2 or PGJI2	UL

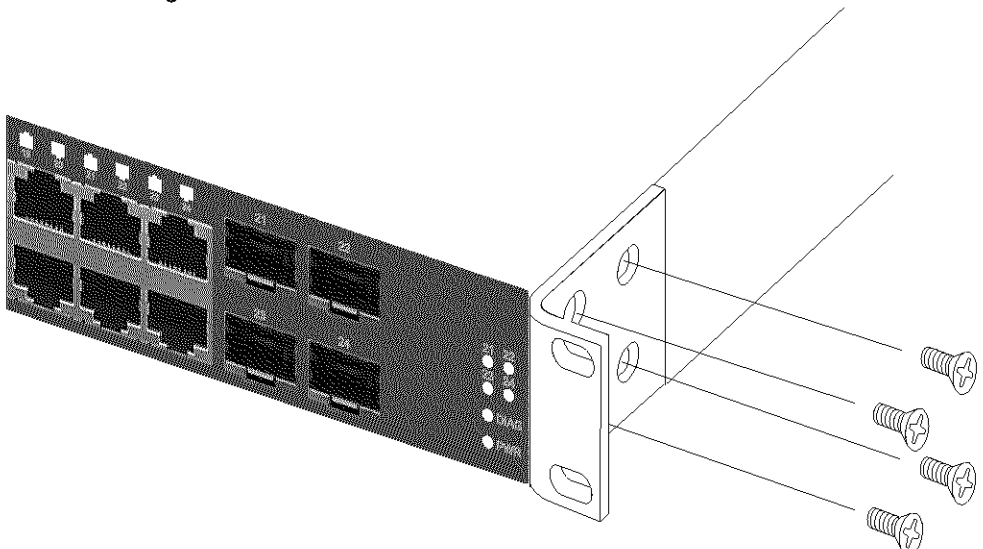
Enclosures

Type	Supplement Id	Description
Photographs	3-01	Overall view-1 for Models ECS3510-26T
Photographs	3-02	Overall view-2 for Model ECS3510-26T
Photographs	3-03	Internal view for Model ECS3510-26T
Diagrams		
Schematics + PWB		
Manuals	6-01	Manual for mounting mean, Model ECS3510-26T
Miscellaneous	7-01	Cover enclosure drawing for Model ECS3510-26T
Miscellaneous	7-02	Bottom enclosure drawing for Model ECS3510-26T
Miscellaneous	7-04	Insulation sheet drawing for Model ECS3510-26T between power board and metal enclosure

To rack-mount devices:

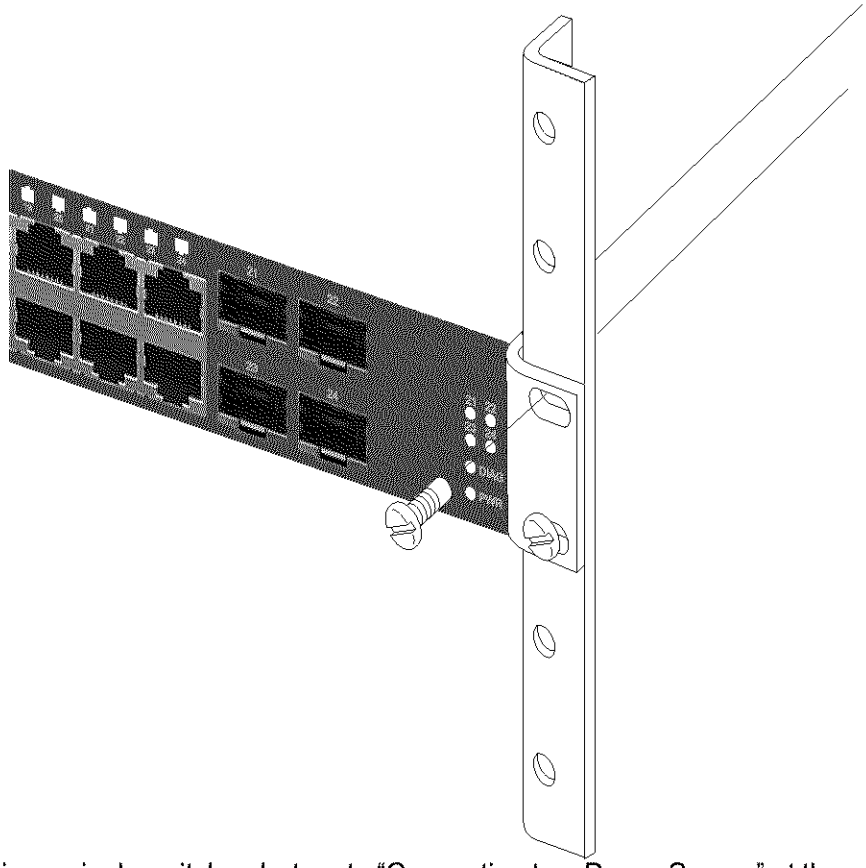
1. Attach the brackets to the device using the screws provided in the Bracket Mounting Kit.

Figure 12: Attaching the Brackets



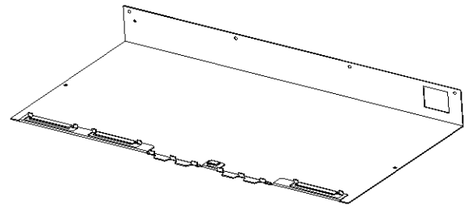
2. Mount the device in the rack, using four rack-mounting screws (not provided). Be sure to secure the lower rack-mounting screws first to prevent the brackets being bent by the weight of the switch.

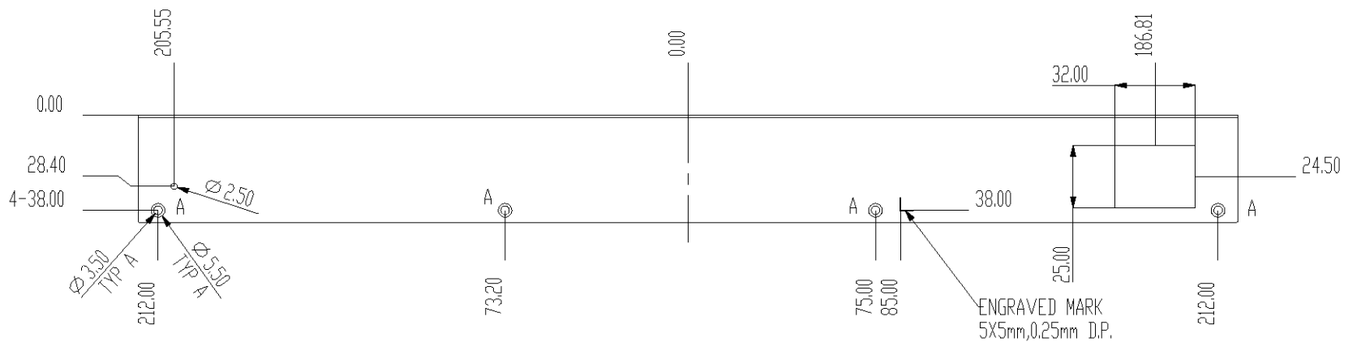
Figure 13: Installing the Switches in a Rack

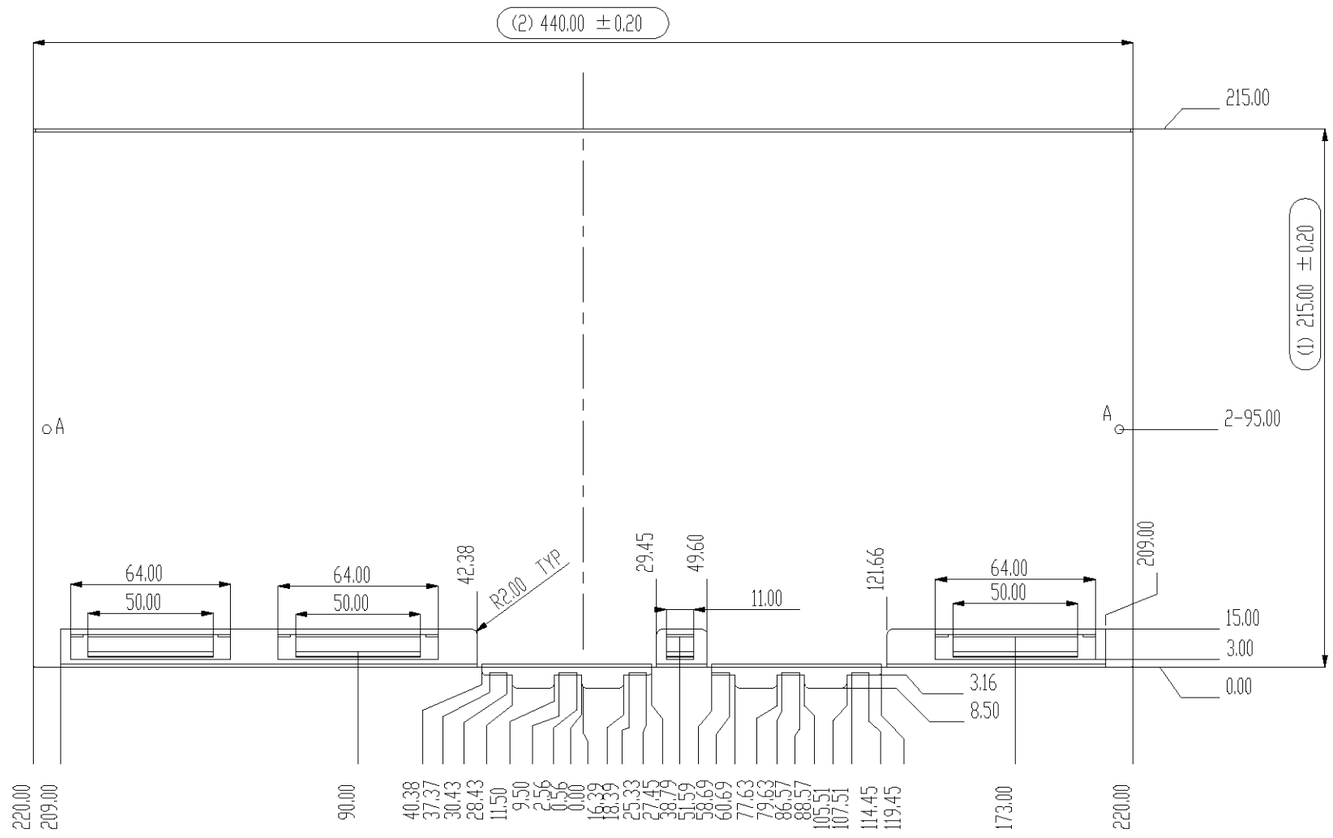


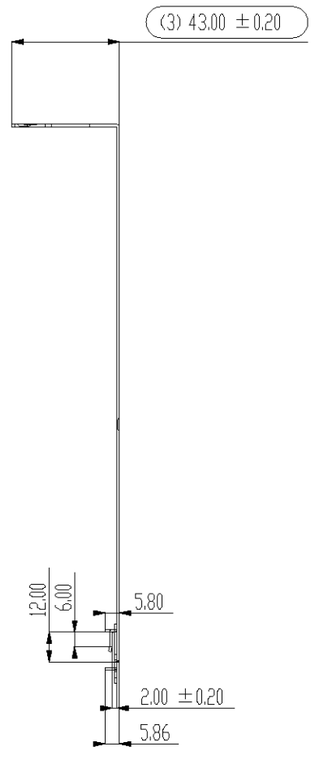
3. If installing a single switch only, turn to “Connecting to a Power Source” at the end of this chapter.

4. If installing multiple switches, mount them in the rack, one below the other.









SCALE 0.400

NOTE:
1.DIMENSIONS(1)-(6) ARE IQC CHECKPOINT
2.ALL PARTS ARE RoHS COMPLIANT.
3.REMOVE ALL OIL,BURRS,BREAK,SHARP EDGES AND CORNERS.

Reason				
	,	,		
	,	,		
	,	,		
	,	,		
	ZONE	DESCRIPTION		

UNSPECIFIED TOL'S (+/-0.2mm)

ANGLE +/- 1°	DIM \ GRADE	0	1	2	3	4	5
ROUGHNESS	0------16	0.05	0.1	0.15	0.2	0.2	0.5
	16------63	0.05	0.15	0.2	0.3	0.3	0.8
	63------250	0.05	0.2	0.25	0.4	0.5	1.2
	250------500	0.1	0.25	0.3	0.6	0.8	1.8
	500------1000		0.3	0.5	0.8	1.2	3.0

FINISH. COATING:3C2X
PRINT:WHITE

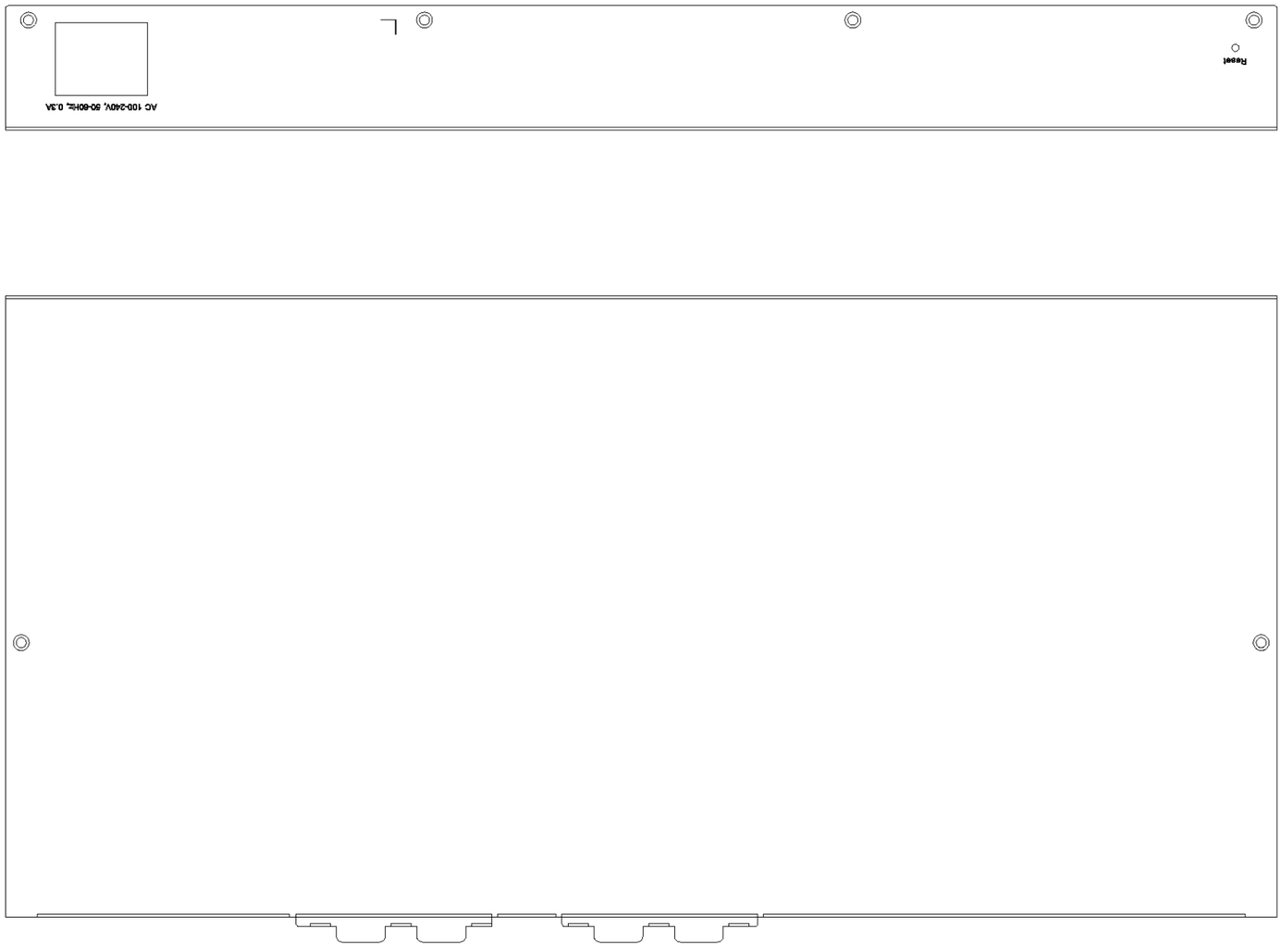
PART NO. XXX

MATERIAL SECC T=1.0mm

SCALE 1/1	UNIT	[MM] IN
APPROVE	...	
CHECK	XX	XX
DESIGN	TEDDY	22-JUL-2010

Accton TECHNOLOGY CORP.

DWG. TITLE.	SHEET	REV.	SIZE
COVER ES3526MA-7LN-EC	1/2	A1	A3



ARTWORK

SCALE 0.500

Item	Part Number	Description	Q'ty
5			.
4			.
3			.
2			.
1	.		.

Reason	.	.
	.	.
	.	.
	.	.
	.	.
	ZONE	DESCRIPTION

UNSPECIFIED TOL'S (+/-0.2mm)

ANGLE +/- 1°	DIM \ GRADE	0	1	2	3	4	5
ROUGHNESS	0------16	0.05	0.1	0.15	0.2	0.2	0.5
	16------63	0.05	0.15	0.2	0.3	0.3	0.8
	63------250	0.05	0.2	0.25	0.4	0.5	1.2
	250------500	0.1	0.25	0.3	0.6	0.8	1.8
	500------1000		0.3	0.5	0.8	1.2	3.0

FINISH.
PRINT:WHITE

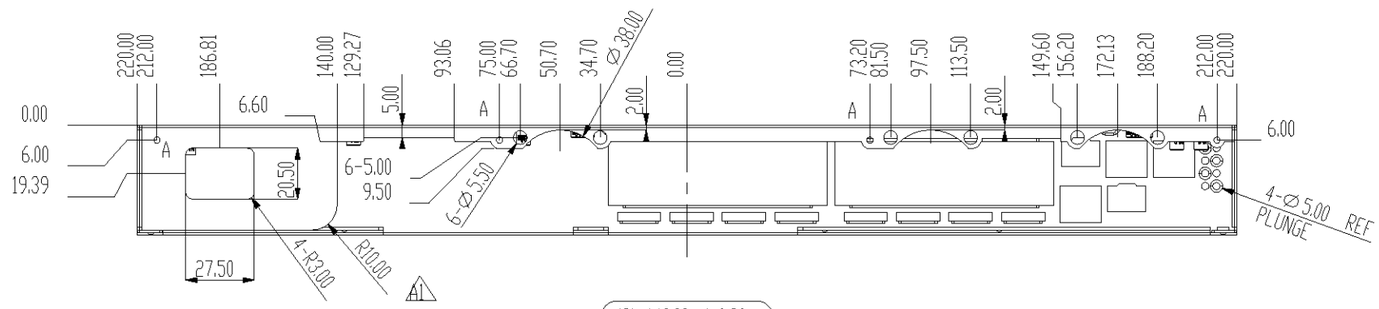
PART NO.
XXX

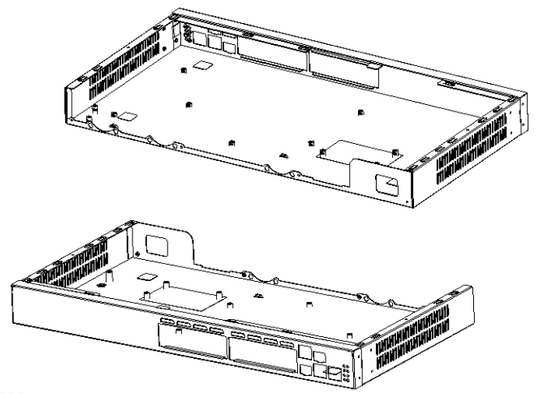
MATERIAL
SECC T=1.0mm

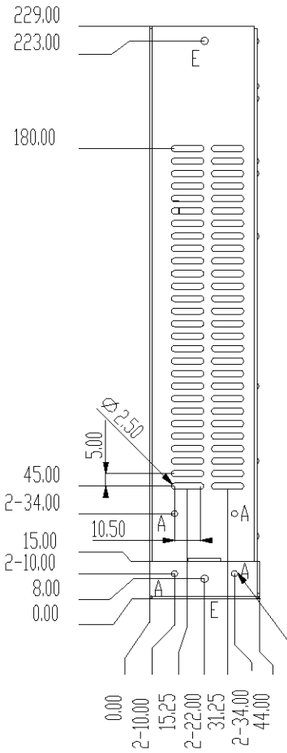
SCALE:1	UNIT	[MM] IN
APPROVE	...	
CHECK	XX	XX
DESIGN	TEDDY	22-JUL-2010

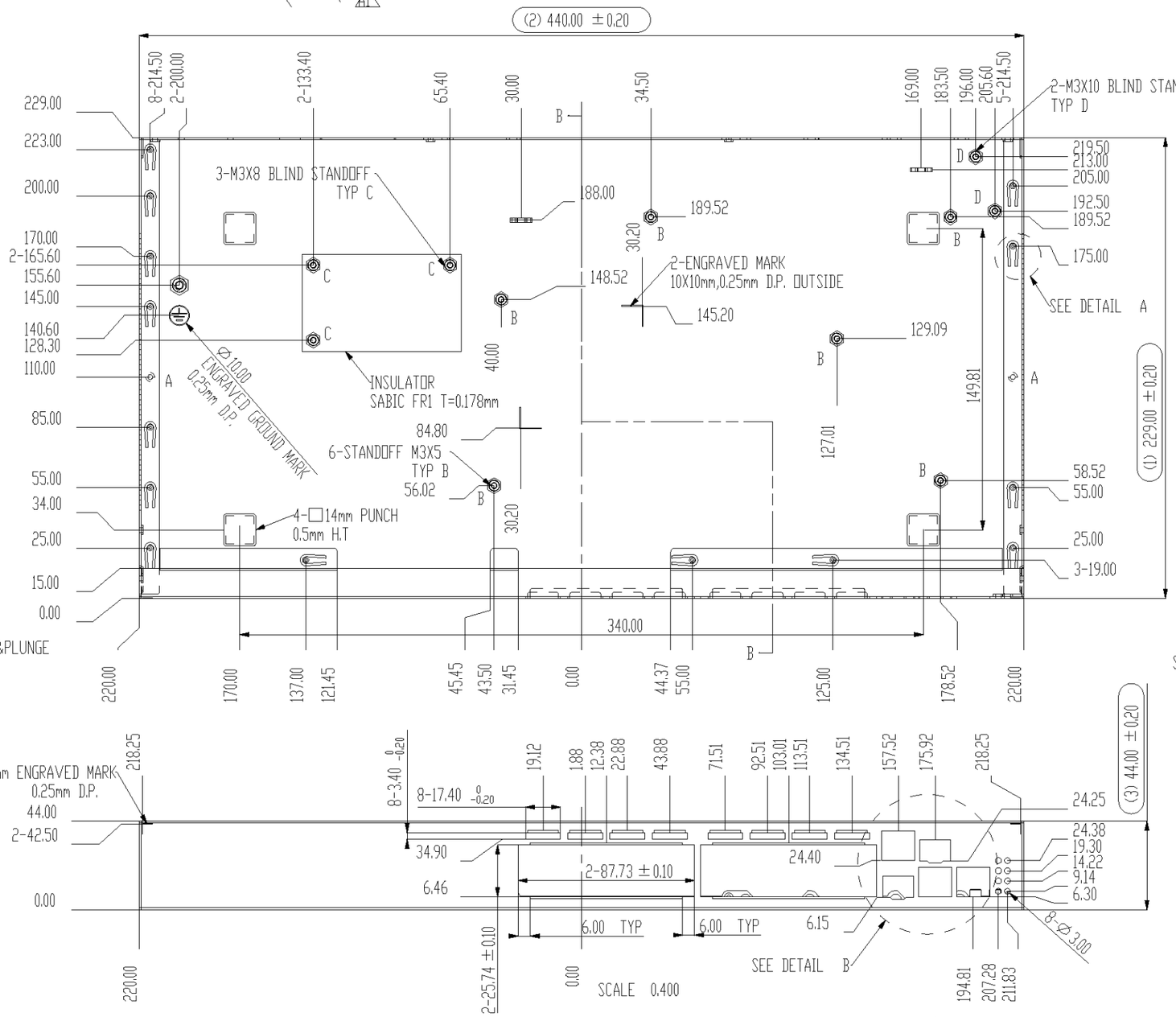
Accton TECHNOLOGY CORP.

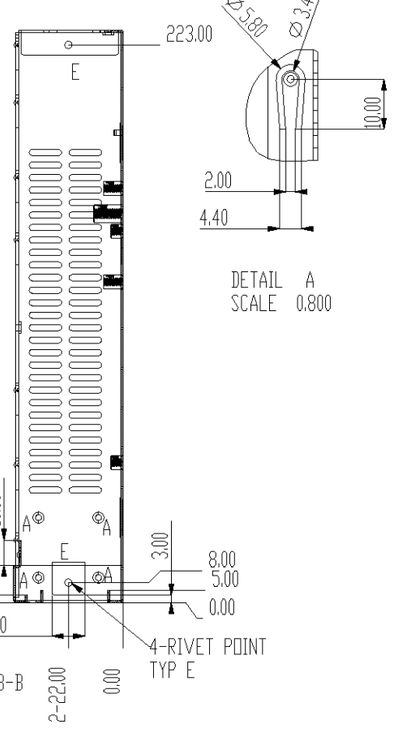
DWG. TITLE.	SHEET	REV.	SIZE
COVER ES3526MA-7LN-EC	2/2	A1	A3

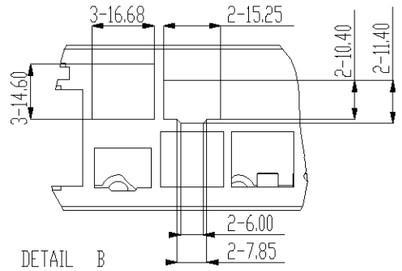












NOTE:
1.DIMENSIONS(1)-(3) ARE IQC CHECKPOINT
2.ALL PARTS ARE RoHS COMPLIANT.
3.REMOVE ALL OIL,BURRS,BREAK,SHARP EDGES AND CORNERS.
4.COVER P/N:123200000155A

Reason			
This document and the technical data disclosed are proprietary to Accton Tech. Corp. and shall not be duplicated, used, released or disclosed without expressed written permission.	A1	MODIFY DIM.	
	ZONE	DESCRIPTION	

UNSPECIFIED TOL'S (+/-0.2mm)

ANGLE +/- 1°	DIM \ GRADE	0	1	2	3	4	5
ROUGHNESS	0------16	0.05	0.1	0.15	0.2	0.2	0.5
	16------63	0.05	0.15	0.2	0.3	0.3	0.8
	63------250	0.05	0.2	0.25	0.4	0.5	1.2
	250------500	0.1	0.25	0.3	0.6	0.8	1.8
	500------1000		0.3	0.5	0.8	1.2	3.0

FINISH. COATING:3C2X

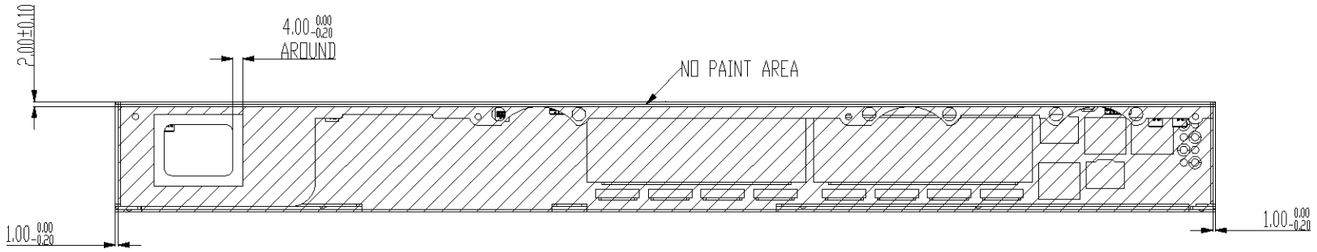
PART NO. XXX

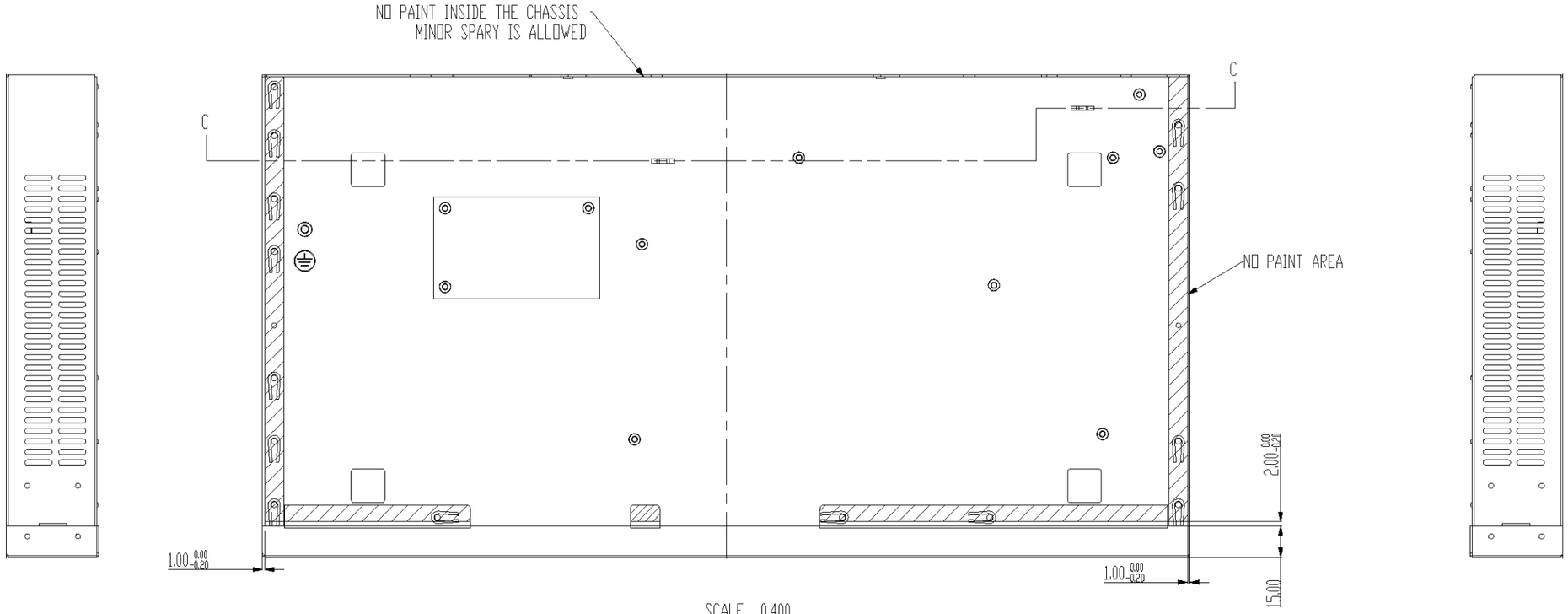
MATERIAL SECC T=1.0mm

~~SCALE 1/1~~	UNIT	[MM] ~~IN~~	
APPROVE	...		
CHECK			
DESIGN	TEDDY	22-JUL-2010	

Accton TECHNOLOGY CORP.

DWG. TITLE.	SHEET	REV.	SIZE
BASE ES3526MA-7LF-EC	1/2	A1	A3





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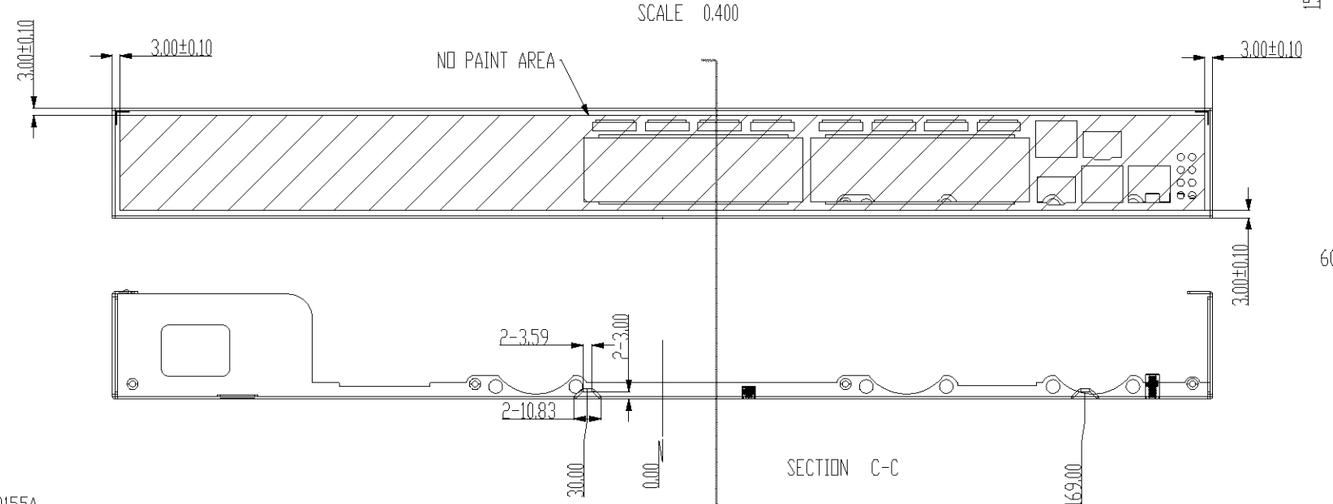
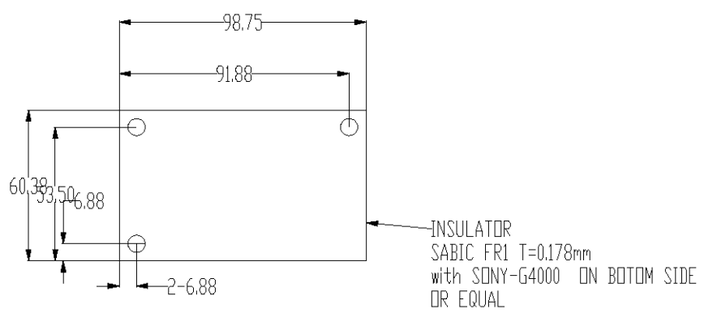


SECTION C-C



FRONT SIDE

SCALE 0.500

NOTE:
1) SHOULD MATCH WELL WITH COVER-1232000000155A
2) ALL PARTS ARE RoHS COMPLIANT.
3) AFTER ASSEMBLE WITH BASE, THE LOW MATERIAL THAT WITHOUT PAINT CAN NOT BE EXPOSED

Reason			ZONE	DESCRIPTION
	,	,		
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	,	,		
	,	,		
	,	,		

UNSPECIFIED TOL'S (+/-0.2mm)

ANGLE +/- 1°	GRADE / DIM	0	1	2	3	4	5
ROUGHNESS	0------16	0.05	0.1	0.15	0.2	0.2	0.5
	16------63	0.05	0.15	0.2	0.3	0.3	0.8
	63------250	0.05	0.2	0.25	0.4	0.5	1.2
	250------500	0.1	0.25	0.3	0.6	0.8	1.8
	500------1000		0.3	0.5	0.8	1.2	3.0

FINISH.
COATING:3C2X

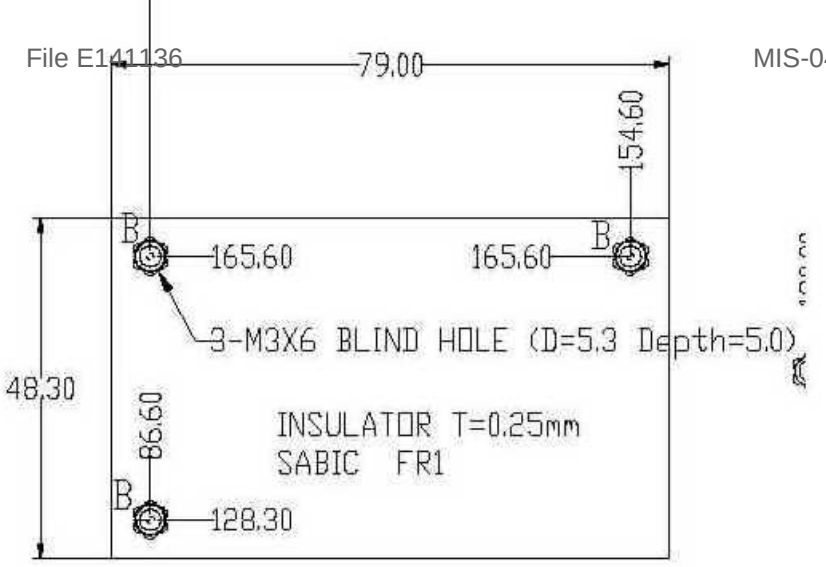
PART NO.
XXX

MATERIAL
SECC T=1.0mm

~~SCALE~~	UNIT	[MM] ~~IN~~
APPROVE	...	
CHECK		
DESIGN	TEDDY	22-JUL-2010

Accton TECHNOLOGY CORP.

DWG. TITLE.	SHEET	REV.	SIZE
BASE ES3526MA-7LF-EC	2/2	A1	A3


79.00
154.60
B
165.60
165.60
B
3-M3X6 BLIND HOLE (D=5.3 Depth=5.0)
48.30
86.60
INSULATOR T=0.25mm
SABIC FR1
B
128.30

Test Record No. 1

-- The manufacturer submitted representative production samples of L2 Fast Ethernet Standalone Switch Model ECS3510-26T.

-- Only limited tests were performed on models ECS3510-26T because of similarity in construction to Model ES-3026 , see Report no. E141136-A194-UL previously evaluated unit. Except for metal shape and model designation.

-- All tests were conducted by Accton Technology Corp., No. 1 Creation Rd. III, Sciencebased Industrial Park, Hsinchu 30077, Taiwan and witnessed by a member of the UL staff under the WTDP program.

-- Test results reported relate only to the items tested.

The following tests were conducted:

Test	Testing Location/Comments
End Product Reference Page	
General Guidelines	
Protective Bonding II (2.6.3.4, 2.6.1)	

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

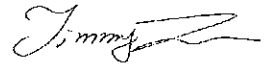
The following tests were waived:

Test	Rationale for Waiving
Input: Single-Phase (1.6.2)	Refer to Report no. E141136-A194-UL
Heating (4.5.1, 1.4.12, 1.4.13)	Refer to Report no. E141136-A194-UL
Electric Strength (5.2.2)	Refer to Report no. E141136-A194-UL
Abnormal Operation (5.3.1 - 5.3.9)	Refer to Report no. E141136-A194-UL
Overload of Operator Accessible Connector (5.3.7)	Refer to Report no. E141136-A194-UL

The following supplements are provided as a part of this Test Record. NOTE: These supplements are only available to the Applicant via the CDA system.

Type	Supplement Id	Description
Attachment	2-01	CRD
Datasheet	2-02	Datasheet

Project: 10CA48536 File: E141136

Compliance Review Conducted by:	Jimmy Tsao		2010-08-26
	Printed Name	Signature	Date

CONSTRUCTION COMPLIANCE REVIEW RECORD

SAMPLE IDENTIFICATION:

Sample Card #	Date Received	Sample #	Manufacturer, Product Identification and Ratings
See Attachment			

[ ] Indications of compliance apply to all samples identified with specific indications of compliance included for construction differences of the different samples

MEASUREMENT INSTRUMENT INFORMATION: (Ex. Micrometer, Calipers, Comparator)

Inst. ID #	Instrument Type	Function/Range	Last Cal. Date	Next Cal. Date
See Attachment				

[ ] Measurement instrument information is recorded on UL's Laboratory Project Management (LPM) database (This statement may be selected only if CRD's are completed at UL facility)

The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID # below corresponds to the Inst ID # above

Inst. ID #	Make / Model / Serial Number / Asset No.
See Attachment	

CONSTRUCTION COMPLIANCE REVIEW:

The sample was reviewed for compliance with the construction requirements in the standard(s) indicated below and a complete record including measurements to support compliance with those requirements is detailed in Report Reference Number E141136-A205

Standard(s):

☒ CSA C22 2 No 60950-1-07, 2nd Edition, 2007-03 (Information Technology Equipment - Safety - Part 1: General Requirements)

☒ UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements)

☒ UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements); CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03 (Information Technology Equipment - Safety - Part 1: General Requirements); IEC 60950-1:2005 Second Edition

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TEST SAMPLE IDENTIFICATION

The table below is to provide correlation of sample numbers to specific product related information Refer to this table when a test identifies a test sample by "Sample No." only

Sample Number	Sample Card Number	Date Received	Manufacturer, Product Identification and Ratings
#1	ECS3510-26T	2010/07/29	Manufacturer: ACCTON TECHNOLOGY CORP Product: L2 Fast Ethernet Standalone Switch Model: ECS3510-26T Rating: 100-240Vac , 50-60Hz , 0.3A
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Sampling Procedure (if used) :			--

File E141136 Project 10CA48536 File Date –

TEST INSTRUMENTS REFERENCE LIST

Instr Code	Instrument I.D.	Instrument Type	Range Used Or ***	Make and Model **	Calibration Date	
					Last	Due
1	B016183	Scope	2 mV-5V ; 0 5S-20nS	TDS-3032	04/30/10	04/30/11
2	47JA0287	Hybrid Recorder	30 Channel	DR230	02/18/10	02/17/11
3	7700HB159	Hybrid Recorder	20 Channel	DR130	03/30/10	03/30/11
4	3-714652	Leakage Current Tester	10, 1,0 1 m A	228	05/19/10	05/20/11
5	1410008	19032 Electrical Safety Analyzer (Hi-Pot/Ground Bond)	AC 5KV/30mA DC 6KV/10mA IR 50M~50G ohm 0-150m ohm(20-60A) 0-510m ohm(1-20A)	19032	02/12/10	02/12/11
6	011782-000	Temperature/Humidity	-40~100℃ /20~98%RH	SM-32-7800	12/31/09	12/30/10
7	704490	DC Electronic Load	1-300V,10A	2601A	01/19/10	01/19/11
8	862948	AC Power Source	0-150V / 0-300V	APW-120N	02/18/10	02/18/11
9	1160359	AC Power Source	0-150V / 0-300V	APW_120N	02/18/10	02/18/11
10	E00119657	DC POWER SUPPLY	60Vdc ,5A	6203-60	03/31/10	03/30/11
11	--	Test Finger	--	--	---	---
12	--	Test Pin	--	--	---	---
13	--	Steel Ball	--	--	02/27/10	02/26/11
14	CAL-R355	Caliper	150mm	150mm	02/23/10	02/23/11
15	000000-104	Electric Scale	6Kg	JCE-6K	02/25/10	02/24/11
16	000000-346	Portable Force Indicator	50KG, Resolution:0.5N	IMADA FB-50	03/09/10	03/09/11
17	98020827	CITIZEN	0-24hrs	LC018-A02	02/27/10	02/26/11
18	96031321	DC/AC Clamp meter	DC/AC 200A	CM-01	03/28/10	03/28/11
19	98036	S&TT	5.5m	--	03/02/10	03/02/11
20	--	Impact test tool	130cm	--	03/03/10	03/03/11
21	012415-000	DC Electronic Load	6A,60A-16V 64V300W	63030	01/12/10	01/11/11

"Chamber setting(s) [was] [were] monitored to ensure that the setting(s) [was] [were] stable throughout the test time frame Any deviations from the setting(s) are noted below.

Date	Test	Instrument Code	Time period of deviation	Setting(s)
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** Information to be recorded when tests are conducted at a non-UL facility

*** Refer to specific data sheet for individual scale used.

[ ] Test equipment information is recorded on UL s Laboratory Project Management (LPM)/Laboratory Equipment Management (LEM) database (This statement may be selected only if datasheets are completed at a UL facility)