

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2019-05-09 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Listing
CCN:	NWGQ, NWGQ7 (Information Technology Equipment Including Electrical Business Equipment)
Complementary CCN:	N/A
Product:	M2M Gateway
Model:	FPA-W44, FPC-N54, FS-QS-2XXX-XXXX, FS-ROUTER-BAC2, FS-EZ3-MOD-BAC, FS-EZ4-MOD-BAC, FS-IOT-BAC, PS-QS-2XXX-F
Rating:	(Optional) 24Vac, 50/60Hz or 12-24Vdc, 0.3A
Applicant Name and Address:	SIERRA MONITOR CORP 1991 TAROB CT MILPITAS CA 95035-6825 UNITED STATES

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 UL LLC ('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.

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

Prepared By: Paul Pham / Project Handler

Reviewed By: Walid Beytoughan / Reviewer

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 electronic components mounted on a PWB, and housed within a plastic enclosure and then secured together by screws, with DIN rail and desktop functions. Supplied by external power adapter.

Model Differences

Model FPC-N54 is identical with model FPA-W44 except for enclosure and function.

FPA-W44 employ an external antennas for WLAN wireless/Bluetooth communication while FPA-N54 does not, for the difference of enclosure, please refer to enclosure 3-03 and 3-05 for details.

Models FS-QS-2XXX-XXXX, FS-ROUTER-BAC2, FS-EZ3-MOD-BAC, FS-EZ4-MOD-BAC, FS-IOT-BAC are identical to FPC-N54 except the color of enclosure and firmware.

Model PS-QS-2XXX-F is similar to model FPC-N54 except for the color of the enclosure.

Test Item Particulars

Equipment mobility	movable
Connection to the mains	not directly connected to the mains
Operating condition	continuous
Access location	operator accessible
Over voltage category (OVC)	OVC II
Mains supply tolerance (%) or absolute mains supply values	No direct connection
Tested for IT power systems	No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	Class III (supplied by SELV)
Considered current rating of protective device as part of the building installation (A)	N/A
Pollution degree (PD)	PD 2
IP protection class	IP X0
Altitude of operation (m)	Up to 2000 m
Altitude of test laboratory (m)	less than 2000 m

Mass of equipment (kg)	Approx. 0.14										
Technical Considerations <ul style="list-style-type: none"> • The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of : 49°C • The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : All Signal I/O Ports. • The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual • LEDs provided in the product are considered low power devices : Yes 											
Additional Information N/A											
Additional Standards The product fulfills the requirements of: N/A											
Markings and Instructions <table border="1"> <thead> <tr> <th>Clause Title</th> <th>Marking or Instruction Details</th> </tr> </thead> <tbody> <tr> <td>Power rating - Company identification</td> <td>Listee's or Recognized companys name, Trade Name, Trademark or File Number</td> </tr> <tr> <td>Power rating - Model</td> <td>Model Number</td> </tr> <tr> <td>(Optional) Inter-connecting cables - External detachable</td> <td>Listee's Name and Part number (Marking or Instruction)</td> </tr> <tr> <td>Wiring terminals marking</td> <td>Marked "NEC Class 2" on the EUT near power input terminals.</td> </tr> </tbody> </table>		Clause Title	Marking or Instruction Details	Power rating - Company identification	Listee's or Recognized companys name, Trade Name, Trademark or File Number	Power rating - Model	Model Number	(Optional) Inter-connecting cables - External detachable	Listee's Name and Part number (Marking or Instruction)	Wiring terminals marking	Marked "NEC Class 2" on the EUT near power input terminals.
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Special Instructions to UL Representative N/A											

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
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BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	All models.					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	All models.					
BD1.4	Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:					
	N/A					

BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics
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1.5.1	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
01. Enclosure	Interchangeable	Interchangeable	Minimum 80°C, minimum HB.	QMFZ2	UL	
02. Power adapter(Optional)	Interchangeable	Interchangeable	Output: 24Vac, 50/60Hz or 12-24Vdc, 0.3A, Tma: minimum 49°C, LPS output.	QQGQ or QQJQ	UL	
03. Connectors and Receptacles (secondary ELV/SELV circuits)	Interchangeable	Interchangeable	Copper alloy pins housed in bodies of plastic rated minimum V-2.	QMFZ2	UL	
03a. Connectors and Receptacles (secondary ELV/SELV circuits)(Alternate)	Interchangeable	Interchangeable	Minimum 6V.	ECBT2 or RTRT2	UL	
04. PCB	Interchangeable	Interchangeable	Min. V-1, minimum 105°C	ZPMV2	UL	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	Overall view 1 (for model FPA-W44)
Photographs	03-02	Overall view 2 (for model FPA-W44)
Photographs	03-03	Overall view 3 (for model FPA-W44)
Photographs	03-04	Overall view 4 (for model FPA-N54)
Photographs	03-05	Overall view 5 (for model FPA-N54)
Photographs	03-06	Overall view 6 (for all models)
Photographs	03-07	Overall view 7 (for all models)
Photographs	03-08	Overall view 8 (for all models)
Photographs	03-09	Internal view 1 (for model FPA-W44)
Photographs	03-10	Internal view 2 (for model FPA-W44)
Photographs	03-11	Internal view 3 (for model FPA-N54)
Photographs	03-12	Internal view 4 (for model FPA-N54)
Photographs	03-13	Main board view 1
Photographs	03-14	Main board view 2