

Model Name: SLA8
Type of product: Sense Line Assembly
Brand Name: Visteon
Manufacturer: Visteon Corporation
Manufacturer Address: One Village center drive, Van Buren Township
48111-5711 Michigan
United States of America

SLA Features

The SLA (Sense Line Assembly) is an electronic module intended to monitor battery module cell groups voltages and module temperatures from the High Voltage battery bus in addition to activate cell balancing to improve battery cells life.

All cell voltages and module temperatures are reported directly to the VICM3 on a regular periodic basis via Wireless communication through the BRFM.

The SLA implements a Cell Monitoring Unit board that uses a Pinnacle IC (ADRF8800), this is an IC that provides wireless communication between the Battery Cell Monitoring chip and the Battery Management System Controller

SLA operates in the frequency range 2.405 GHz - 2.480 GHz (ISM band) by using Wireless battery management technology.

The network periodicity is 100ms; meaning, each particular CMU will send once or twice every 100ms and the transmission time is $1.85\text{ms} \times 2 \times R$ ($R=2$ for SLA).

There are no simultaneous transmission on the system; there can be CMUs that communicate at the same time but different channels.

System interaction:

Module-to-Vehicle Electrical Interface	
Analog Input	Battery module provides voltage to SLA. Power nominal value is 29.2V Minimum voltage expected is 8V and maximum is 35.2V. NTC1, NTC2 and NTC3 thermistors from ICB.
Digital (discrete state) Input	NA
Analog Output	NA
Digital (discrete state) Output	NA
Communication Bus	NA
RF Link(s)	ISM Band (2.405 GHz to 2.480 GHz) used to communicate with BRFM modules. Rx sensitivity shall be around 50% of PER, where each measurement shall vary by no more than +/- 2.0dB from the golden sample. Tx output power shall vary by no more than +/-2.5dB from the golden sample. Radio frequency reference shall be within $\pm 20\text{PPM}$ from desired frequency (2.44GHz, channel 7).
Module-to-Vehicle Non-Electrical Interface	

N/A	
User Interface	
NA	
Internal Interface	
Note: For these internal I/O, monitoring shall only occur via communication bus data or via indirect methods. Direct monitoring using attachments leads to external monitoring devices shall not be included.	
Analog Input	NA
Digital (discrete state) Input – steady-state I/O	NA
Switching & Clock Frequency Content	SPI communication shall be 1Mbps nominal. Used to communicate between RF manager to Sensors ASIC. RF Manager IC XTAL frequency shall be 40MHz nominal.
Digital (discrete state) Input – dynamic I/O	NA
Analog Output	Main power supply SMPS U302 0shall have an output voltage of 3.3V with ±5mV peak-to-peak ripple voltage
Digital (discrete state) Output	
Communication Bus	
Note: This section assumes that production software is not mandatory; the use of specialized software is acceptable. Note: Software diagnostic timers should be reset to minimum detection values, to facilitate assertion of potential diagnostic flags during the RF exposure time (maximum 2 seconds). Note: States/faults/issues shall be reported directly over the communication bus (i.e., Class 2, Controller Area Network (CAN), etc.) or indirectly if the communication bus is not available via the cycling of output(s) (e.g., PWM duty cycle change, telltale flash rate change, etc.) Note: Unless otherwise specified in the EMC Test Plan, in order to ensure a refreshed value, all information related to data monitoring (such as analog input voltages, operating states, etc.) shall be via parameter requests (e.g., Parameter ID (PID)) and not via scheduled, or periodic, broadcast messages. This ensures bi-directional communications during immunity testing.	

The following information shall also be included in the case of radio equipment intentionally emitting radio waves:

- a. Frequency band : 2.405 – 2.480 GHz
- b. Maximum radio-frequency power transmitted in the frequency band(s) in which the radio equipment operates. Max output power = 10 dBm

(U.S.A. and Canada)

FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) The device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF exposure safety

This device complies with the FCC RF exposure limits and has been evaluated in compliance with portable exposure conditions.

*The equipment must be installed and operated and was evaluated with minimum distance of **5.668 cm** of the human body. This distance or greater is maintained by vehicle design and ensures compliance by normal use of the vehicle.*

ISED CANADA

This device complies with Industry Canada License-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) The device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et,
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF exposure safety

This device complies with the FCC RF exposure limits and has been evaluated in compliance with portable exposure conditions.

*The equipment must be installed and operated and was evaluated with minimum distance of **5.668 cm** of the human body. This distance or greater is maintained by vehicle design and ensures compliance by normal use of the vehicle.*

CAN ICES-003

Les changements ou modifications non expressément approuvés par la partie responsable de la conformité peuvent annuler le droit de l'utilisateur à utiliser l'équipement.

Sécurité d'exposition aux RF

Cet appareil est conforme aux limites d'exposition RF d'ISED et a été évalué conformément aux conditions d'exposition portable.

*L'équipement doit être installé et utilisé à une distance minimale de **5.668 cm** du corps humain. Cette distance ou plus est maintenue par la conception du véhicule et assure la conformité par l'utilisation normale du véhicule.*

CAN NMB-003

Cet appareil numérique de classe B est conforme à la norme canadienne NMB-003.

Customer Information

Declaration of Conformity

CE MARK:



Simplified EU DoC:

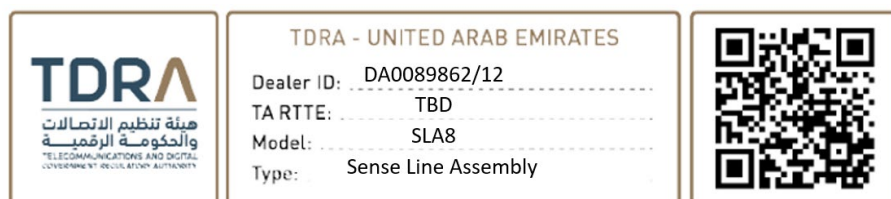
Hereby, Visteon Corporation declares that the radio equipment type **SLA8** is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: <http://www.visteondocs.com/>

български [Bulgarian]	С това фирмата Visteon Corporation декларира, че частта SLA8 е в съответствие със съществените изисквания и други приложими разпоредби на директивата 2014/53/ЕС.
Česky [Czech]	Visteon Corporation tímto prohlašuje, že tento SLA8 je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 2014/53/EU.
Dansk [Danish]	Undertegnede Visteon Corporation erklærer herved, at følgende udstyr SLA8 overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU.
Deutsch [German]	Hiermit erklärt Visteon Corporation , dass sich das Gerät SLA8 in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 2014/53/EU befindet.
Eesti [Estonian]	Käesolevaga kinnitab Visteon Corporation seadme SLA8 vastavust direktiivi 2014/53/EL põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, Visteon Corporation , declares that this SLA8 is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.
Español [Spanish]	Por medio de la presente Visteon Corporation declara que el SLA8 cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/UE.
Ελληνική	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Visteon Corporation ΔΗΛΩΝΕΙ ΟΤΙ SLA8 ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΠΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/ΕΚ.

[Greek]	
Français [French]	Par la présente Visteon Corporation déclare que l'appareil SLA8 est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/UE.
Italiano [Italian]	Con la presente Visteon Corporation dichiara che questo SLA8 è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/UE.
Latviski [Latvian]	Ar šo Visteon Corporation deklarē, ka SLA8 atbilst Direktīvas 2014/53/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo Visteon Corporation deklaruoja, kad šis SLA8 atitinka esminius reikalavimus ir kitas 2014/53/EB Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart Visteon Corporation dat het toestel SLA8 in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EG.
Malta [Maltese]	Hawnhekk, Visteon Corporation , jiddikjara li dan SLA8 jikkonforma mal-htigijiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm fid-Dirrettiva 2014/53/UE.
Magyar [Hungarian]	Alulírott, Visteon Corporation nyilatkozom, hogy a SLA8 megfelel a vonatkozó alapvető követelményeknek és az 2014/53/EU irányelv egyéb előírásainak.
Polski [Polish]	Niniejszym Visteon Corporation oświadcza, że SLA8 jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2014/53/UE.
Português [Portuguese]	Visteon Corporation declara que este SLA8 está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/UE.
Slovensko [Slovenian]	Visteon Corporation izjavlja, da je ta SLA8 v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2014/53/ES.
Slovensky [Slovak]	Visteon Corporation týmto vyhlasuje, že SLA8 spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EÚ.
Suomi [Finnish]	Visteon Corporation vakuuttaa täten että SLA8 tyypinen laite on direktiivin 2014/53/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]	Härmed intygar Visteon Corporation att denna SLA8 står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EU.
Íslenska [Icelandic]	Hér með lýsir Visteon Corporation yfir því að SLA8 er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 2014/53/EU.
Norsk [Norwegian]	Visteon Corporation erklærer herved at utstyret SLA8 er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 2014/53/EF.

Crnogorski jezik, Црногорски језик [Montenegrin]	Ovim, Visteon Corporation , izjavljuje da ovaj SLA8 je usklađen sa bitnim zahtjevima i drugim relevantnim odredbama Direktive 2014/53/UE.
Română [Romanian]	Prin prezenta, Visteon Corporation , declară că acest SLA8 respectă cerințele esențiale și alte dispoziții relevante din Directiva 2014/53 / UE.
Türkiye [Turkey]	Visteon Corporation , işbu SLA8 'ın 2014/53 / EU Direktifinin esas şartları ve diğer ilgili hükümlerine uygun olduğunu beyan eder.
Hrvatska [Croatian]	Ovime Visteon Corporation izjavljuje da je ovaj SLA8 u skladu s osnovnim zahtjevima i ostalim relevantnim odredbama Direktive 2014/53 / EU.

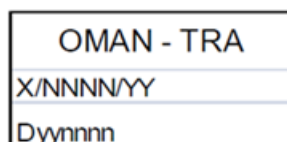
United Arab Emirates



Kingdom of Saudi Arabia



Oman



Mexico

Homologation by IFTXXXXXXXX-XXXX

Certification By: NYCE



'La operación de este equipo está sujeta a las siguientes dos condiciones:

(1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada'.

a) Lea el Manual antes de operar o usar el Equipo.

b) Información de importador:

Nombre: General Motors de México, S. de R. L. de C. V.

Dirección/Address: Av. Ejército Nacional 843-B. Colonia Granada, Miguel Hidalgo. CP 11520

Contacto: Fernando Camacho Jiménez

Correo: fernando.camacho@gm.com

Teléfono: (52-722) 235 8487

c) Marca: Visteon Corporation / Nombre del Modelo: BRFMS

d) El SLA8 es instalado dentro del Battery Pack, por lo tanto, el usuario final no tiene interacción directa con el módulo SLA8.

e) Especificaciones Eléctricas:

Tensión de alimentación: 35.2V (Vcc)

Corriente de alimentación: 500 mA

Frecuencia: 2.4 GHz

Potencia: 18 W

China

This device contains SRRC type approval radio transmitter module with code as: CMIIT ID: XXXXYZNNNN'.

本设备包含型号核准代码(分别)为: CMIIT ID: XXXXYZZZZ,...的无线电发射模块。

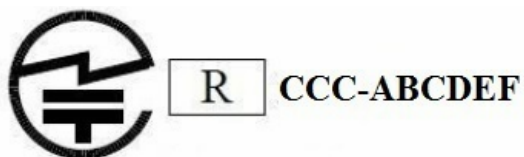
Israel

XX-XXXXX הוא התקשורת משרד של אלחוט אישור מספר

"Wireless approval signed by the Ministry of Communication no. #ID Certificate"

Japan

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Kazakhstan

- Safety using requirements. (GM will need to provide or place this information on final User Manual in Russian and Kazakhstan language).
- Installing, storing, shipping, sailing and utilization requirements. (GM will need to provide or place this information on final User Manual in Kazakhstan language).



South Korea



인증번호: TBD

인증 받은 자의 상호: Visteon Corporation

기자재의 명칭/ 모델명: BRFMS

제조연월일: 별도표기

제조사/제조국가: Visteon Corporation /USA

United Kingdom



a. Frequency band : 2.405 – 2.480 GHz

b. Maximum radio-frequency power transmitted in the frequency band(s) in which the radio equipment operates. Max output power = 10dBm