

Model Name: CSCLG  
 Type of product: Cell Supervisory Circuit  
 Brand Name: Visteon  
 Manufacturer: Visteon Corporation  
 Manufacturer Address: One Village center drive, Van Buren Township  
 48111-5711 Michigan  
 United States of America

### CSCLG Features

The CSCLG (Cell Supervisory Circuit) is a sensing circuit installed on or adjacent to the cell modules. Their main function is to measure cell voltages and temperatures, as well as perform cell balancing operations.

All cell voltages and module temperatures are reported directly to the BPCM (Battery Pack Control Module) on a regular periodic basis via Wireless communication.

The CSCLG implements a Cell Monitoring Unit board that uses a Pinnacle IC (ADRF8900), this is an IC that provides wireless communication between the Battery Cell Monitoring chip and the Battery Management System Controller.

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

### Wireless CSC Connector Pinout (Cell Connections)

For wireless BMS applications, CSC is integrated into battery module. BMS and Battery Pack Supplier shall be responsible to connect all battery cells to CSC modules. Every single wire between battery cell voltage acquisition point to CSC module shall have fuse protection circuit.

CSC shall contain passive balancing circuitry. BPCM shall have protection to ensure that the balancing does not turn on when it's not intended to balance. Cell balancing logic shall follow SRD requirements.

Cell balancing current shall meet battery pack performance requirements. CSC module shall have minimal of 125mA (battery pack based) balancing current capability.

### DUT Pinout Information

Connector J101						
PIN#	Test Point	Signal Description	Type	Voltage (V)	Current (A)	Comments
1	TP261	GND	-	TBC	TBC	GND
2		NC	-	-	-	
3	TP217	V0	In	TBC	TBC	
4	TP215	V2	In	3.7V	0.125	
5	TP101	V4	In	3.7V	0.125	
6	TP105	V6	In	3.7V	0.125	
7	TP222	V8	In	3.7V	0.125	

8		NC	-	-	-	
9	TP200	PWR	Supply	29.6V	0.02	Power
10		NC	-	-	-	
11	TP277	NTC_1-	In	TBC		Off-Board Temp. Sensor #1 - Input
12	TP207	NTC_1+	In	1.5V	0.01	Off-Board Temp. Sensor #1 - Input
13		NC	-	-	-	

Connector J102						
PIN#	Test Point	Signal Description	Type	Voltage (V)	Current (A)	Comments
1	TP262	NTC_2-	In	TBC	TBC	Off-Board Temp. Sensor #2 - Input
2	TP259	NTC_2+	In	1.5V	0.01	Off-Board Temp. Sensor #2 - Input
3	TP	NC	-	-	-	
4	TP	V7	In	3.7V	0.125	
5	TP	V5	In	3.7V	0.125	
6	TP	V3	In	3.7V	0.125	
7	TP	V1	In	3.7V	0.125	
8		NC	-			
9		NC	-			
10		NC	-			
11		NC	-			
12		NC	-			
13		NC	-			

### Critical Interface Signals

Signal Description	Voltage/Current Level	Frequency	% Duty Cycle (Range)
Cell Voltage Reading	3.7 V	DC	N.A
Balancing Current	125 mA @3.7V	DC	50%
On-Board Temperature Reading (NTC3)	3V	DC	N.A
Temperature Reading (NTC1 & NTC2)	3V	DC	N.A.

### List of CSC Performance Functions

I/O Description	Function	DUT Pin #	Nominal
RF Communication	Packet Data Rate	Embedded Antenna	PDR>70%
V0	Cells Voltage Monitoring	TP217	
V1	Cells Voltage Monitoring	TP248	2.5 to 4.5V (Note 1)
V2	Cells Voltage Monitoring	TP215	2.5 to 4.5V (Note 1)
V3	Cells Voltage Monitoring	TP257	2.5 to 4.5V (Note 1)
V4	Cells Voltage Monitoring	TP101	2.5 to 4.5V (Note 1)
V5	Cells Voltage Monitoring	TP102	2.5 to 4.5V (Note 1)
V6	Cells Voltage Monitoring	TP105	2.5 to 4.5V (Note 1)
V7	Cells Voltage Monitoring	TP107	2.5 to 4.5V (Note 1)
V8	Cells Voltage Monitoring	TP222	2.5 to 4.5V (Note 1)
NTC_1+	Cell/Modules Temperature Monitoring	TP207	1.5V (R <sub>LOAD</sub> = 10kΩ) (Note 2)
NTC_1-	Cell/Modules Temperature Monitoring	TP277	

NTC_2+	Cell/Modules Temperature Monitoring	TP259	1.5V (R <sub>LOAD</sub> = 10kΩ)  (Note 2)
NTC_2-	Cell/Modules Temperature Monitoring	TP262	
GND		TP261	
All DUT pins disconnected	N/A	1-24 (Flex Cable Pins - LG)  1-21 ( Pins - SDI)	N/A

Note 1: The nominal cell voltage value is defined during BPCM module calibration phase (first 20 seconds).

Note 2: The nominal temperature report value should be taken from the log before starting the test (active mode)

Mode	Location (Pin)	ESD Simulator Voltage (kV)	Description / Name Signal / Pin
0	J1-00	±3, ±4kV	Mechanical Vias
0	J1-01	±3, ±4kV	NTC_1+
0	J1-02	±3, ±4kV	NTC_1-
0	J1-03	±3, ±4kV	GND
0	J1-04	±3, ±4kV	V0
0	J1-05	±3, ±4kV	V1
0	J1-06	±3, ±4kV	V2
0	J1-07	±3, ±4kV	V3
0	J1-08	±3, ±4kV	NTC_2-
0	J1-09	±3, ±4kV	NTC_2+
0	J1-10	±3, ±4kV	V4
0	J1-11	±3, ±4kV	V5
0	J1-12	±3, ±4kV	V6
0	J1-13	±3, ±4kV	V7
0	J1-14	±3, ±4kV	V8
0	J1-15	±3, ±4kV	NC
0	J1-16	±3, ±4kV	NC
0	J1-17	±3, ±4kV	NC
0	J1-18	±3, ±4kV	NC

0	J1-19	$\pm 3, \pm 4\text{kV}$	PWR
0	J1-20	$\pm 3, \pm 4\text{kV}$	Mechanical Vias

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.
- c. Max output power = 12 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 20 cm of the human body. This distance or greater is maintained by vehicle design and ensures compliance by normal use of the vehicle.*

*For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:*

*Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:*

- Reorient or relocate the receiving antenna.*
- Increase the separation between the equipment and receiver.*
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- Consult the dealer or an experienced radio/TV technician for help.*

### **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 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 20 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(B)**

*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 20 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(B)**

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

#### **Part 15 – Interference Statement (On Part and in Owners Manual, or in Owners Manual)**

**NOTE:** When the device is so small or for such use that it is not practicable to place the Interference Statement on it (e.g. TPMS), the below statement shall be placed in the Owners Manual:

"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) this device must accept any interference received, including interference that may cause undesired operation."

**Interference Statement (On Part and in Owners Manual, or in Owners Manual)**

Licence-exempt radio apparatus shall contain the following or equivalent notice in a conspicuous location in the user manual or alternatively on the device or both.

This device complies with Innovation, Science, and Economic Development Canada (ISED) licence-exempt RSS standard(s).

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device

Homologation by  IFT ABCDEF23-123456

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: Stellantis Mexico S.A. de C.V.

Dirección: Av. Prolongación Paseo de la Reforma 1240, Santa Fe Cuajimalpa, Cuajimalpa de Morelos, Ciudad de México, 05348.

Contacto: Osbahal Miguel Mascara Bañuelos

Correo: [miguel.mascarua@stellantis.com](mailto:miguel.mascarua@stellantis.com)

Teléfono: +52 554-350-1487

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

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

e) Especificaciones Eléctricas:

Tensión de alimentación: 29.6 Vcc

Corriente de alimentación: 0.02 A

Frecuencia: 2.4 GHz

Potencia: 0.6 W