



DB-EVCC-560

Product Specification

1.0.2

Issue No. 1.0.2: 2025.11.6

Legal Information

Copyright

Copyright 2025 Dropbeats, ltd. Co. All rights reserved.

The information in this document is proprietary and confidential to Dropbeats, ltd. Co., and for its customers' internal use. In any event, no part of this document may be reproduced or redistributed in any form without the express written consent of Dropbeats, ltd. Co.

[DB-xxxxxxx] ([Development Status][x]), ref [DB-yyyyyyy] ([Development Status][y])

Disclaimer

None of the information contained in this document constitutes an express or implied warranty by Dropbeats, ltd. Co. as to the sufficiency, fitness or suitability for a particular purpose of any such information or the fitness, or suitability for a particular purpose, merchantability, performance, compatibility with other parts or systems, of any of the products of Dropbeats, ltd. Co., or any portion thereof, referred to in this document. Dropbeats, ltd. Co. expressly disclaims all representations and warranties of any kind regarding the contents or use of the information, including, but not limited to, express and implied warranties of accuracy, completeness, merchantability, fitness for a particular use, or non-infringement.

In no event will Dropbeats, ltd. Co. be liable for any direct, indirect, special, incidental or consequential damages, including, but not limited to, lost profits, lost business or lost data resulting from any use of or reliance upon the information, whether or not Dropbeats, ltd. Co. has been advised of the possibility of such damage.

Trademarks

For a complete list of Dropbeat's trademarks and registered trademarks, visit: <http://www.drop-beats.com/>

Patents

The technology discussed in this document is protected by one or more of the following patent grants:

U.S. Patent No. x,xxx,xxx, y,yyy,yyy. Canadian Patent No. xx,xxx,xxx, and so on. Other relevant patent grants may also exist.

Contacting Dropbeats

Dropbeats

123 Juli Road, Building 4, Shanghai, China

Tel: +86 (21) 5085-0752

Fax: +86 (21) 5085-0753

Document Information: document@drop-beats.com

Corporate Information: info@drop-beats.com

Technical Support: apps@drop-beats.com

Web Site: <http://www.drop-beats.com>

Table of Contents

<i>Legal Information</i>	1
<i>Copyright</i>	1
<i>Disclaimer</i>	1
<i>Trademarks</i>	1
<i>Patents</i>	1
<i>Contacting Dropbeats</i>	1
<i>Table of Contents</i>	2
<i>1 Overview</i>	3
<i>1.1 Supported Standards</i>	4
<i>1.2 Technical Data</i>	4
<i>1.3 Certificates</i>	4
<i>2 Interface</i>	5
<i>2.1 Definition</i>	5
<i>3 Technical Characteristics</i>	7
<i>3.1 Physical Features</i>	7
<i>3.2 Wiring Harness Recommendations</i>	7
<i>4 Diagram</i>	8
<i>5 Typical System Wiring Scenario</i>	9
<i>6 Order Information</i>	10
<i>Legal Information</i>	11
<i>Contacting Dropbeats Technology</i>	11
<i>Revision History</i>	11

1 OVERVIEW

DB-EVCC-560 is an Electric Vehicle Communication Controller (EVCC) embedded in the EV for rapid charging, compliant with international standards DIN SPEC 70121 and ISO/IEC 15118-2/20, which are core components of the Combined Charging System (CCS) and the Megawatt Charging System (MCS).

For charging communication between the EV and Electric Vehicle Supply Equipment (EVSE), it supports Control Pilot (CP), Proximity Pilot (PP), as well as PWM signaling, including HomePlug Green PHY communication for the CCS system, and 10Base-T1S PHY1/2, Insertion Detection (ID), and Charge Enable (CE) for MCS.

Additionally, charging CAN-BUS control and IEC 61851 compliance are fully integrated, providing maximum flexibility, reliability, and efficiency.



Figure 1: Image of DB-EVCC-560 Product

1.1 Supported Standards

- HomePlug Green PHY™ 1.1(IEEE 1901)
- ISO 15118-3/10
- DIN SPEC 70121
- ISO 15118-2/20 DC Spec
- IEC61851-1, IEC 61851-23, IEC 61851-2

1.2 Technical Data

- Communications
 - 2 x CAN:
 - 1 x CAN 2.0B, 250Kbps, Charging CAN
 - 1 x CAN 2.0B, 500Kbps, UDS CAN
 - 1 x Power Line Communication (Spectrum: 2~30MHz)
 - 1 x 10Base-T1S Digital Communication
- Wake-up Mechanisms
 - Vehicle CAN
 - Control Pilot for CCS
 - ID for MCS
 - KL15
- Connector Interlocking
 - Support 3-wire/4-wire Inlet Actuator
 - Interlocking of the connector with the inlet during charging process
 - Read-back channel to check if connector is properly plugged and locked
- Power Dissipation
 - Active: 280mA (Vin DC 12V)
 - Standby: **60uA**

1.3 Certificates

- RoHS 2.0
- REACH

2 INTERFACE

2.1 Definition

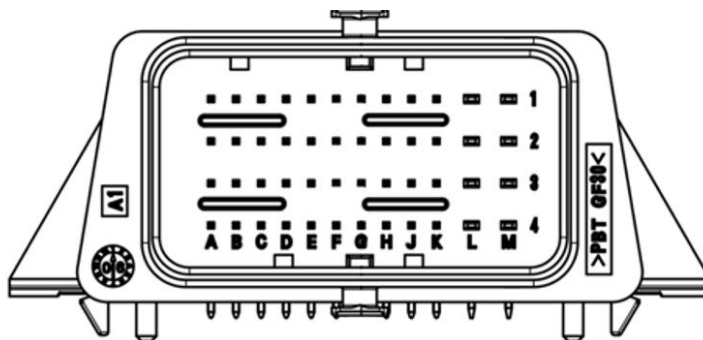


Figure 2: Interface of DB-EVCC-560 Product

Pin	Symbol	Type	Description
1A	AI3	Analog Input	Reserved
1B	AI4	Analog Input	Reserved
1C	-	-	-
1D	-	-	-
1E	MCS_ID	Analog	MCS Insertion Detection
1F	MCS_CE	Analog	MCS Charge Enable
1G	MCS_T1S_PHY1	Digital	MCS 10Base-T1S PHY+
1H	MCS_T1S_PHY2	Digital	MCS 10Base-T1S PHY-
1J	-	-	-
1K	MCS_LOCK_P	Analog Input	Locker-Feedback
1L	MCS_LOCK_F	Digital Output	Locker-Forward, Lock
1M	MCS_LOCK_R	Digital Output	Locker-Reverse, Unlock
2A	AI0	Analog Input	Reserved
2B	-	-	-
2C	CAN0_H	Digital	UDS CAN
2D	CAN0_L	Digital	UDS CAN
2E	CAN1_H	Digital	Charging CAN
2F	CAN1_L	Digital	Charging CAN
2G	-	-	-
2H	-	-	-
2J	CCS_CP	Analog	CCS Control Pilot
2K	CCS_PP	Analog	CCS Proximity Pin
2L	PE	Protected Earth	
2M	KL31	ECU Ground	Terminal 31
3A	AI1	Analog Input	Reserved
3B	GND	ECU Ground	
3C	CAN0_SHLD		CAN Shield
3D	CAN0_SHLD		CAN Shield

Pin	Symbol	Type	Description
3E	GND		CAN Shield
3F	GND		CAN Shield
3G	-	-	-
3H	-	-	-
3J	-	-	-
3K	GND	ECU Ground	
3L	CCS_LOCK_F	Digital Output	Locker-Forward, Lock
3M	CCS_LOCK_R	Digital Output	Locker-Reverse, Unlock
4A	AI2	Analog Input	Reserved
4B	CCS_LOCK_P	Analog Input	Locker-Feedback
4C	GND		
4D	DI	Digital Input	Reserved
4E	GND	ECU Ground	
4F	-	-	-
4G	-	-	-
4H	-	-	-
4J	-	-	-
4K	KL15	Terminal 15 signal	Terminal 15
4L	DO	High Side 200mA	High Side Out
4M	KL30	Power Supply	Terminal 30

3 TECHNICAL CHARACTERISTICS

3.1 Physical Features

Item	Description
Operation Voltage	+9V~ 32V DC
Operation Temperature	-40°C ~ +105°C
Storage Temperature	-40°C ~ +105°C
Operation Humidity	0 ~ 90%RH
Housing Degree of Protection	IP67
Fire Rating	V-0
Dimensions (L*W*H)	158mm * 162.2mm * 35.5mm
Header and Connector	Molex 5007620481 Header(48pin) & Molex Connector 643203311/643203301

3.2 Wiring Harness Recommendations

Wiring Harness	Rate Voltage	Peak Current	Type	Diameter(mm ²)
CP/PE			Twisted-Pair	0.75
UDS CAN			Twisted-Pair	0.75/0.5
Charging CAN			Twisted-Pair	0.75/0.5
10Base-T1S PHY			Twisted-Pair	0.75/0.5
KL30	24V	0.5A		0.75
KL31	24V	0.5A		0.75

4 DIAGRAM

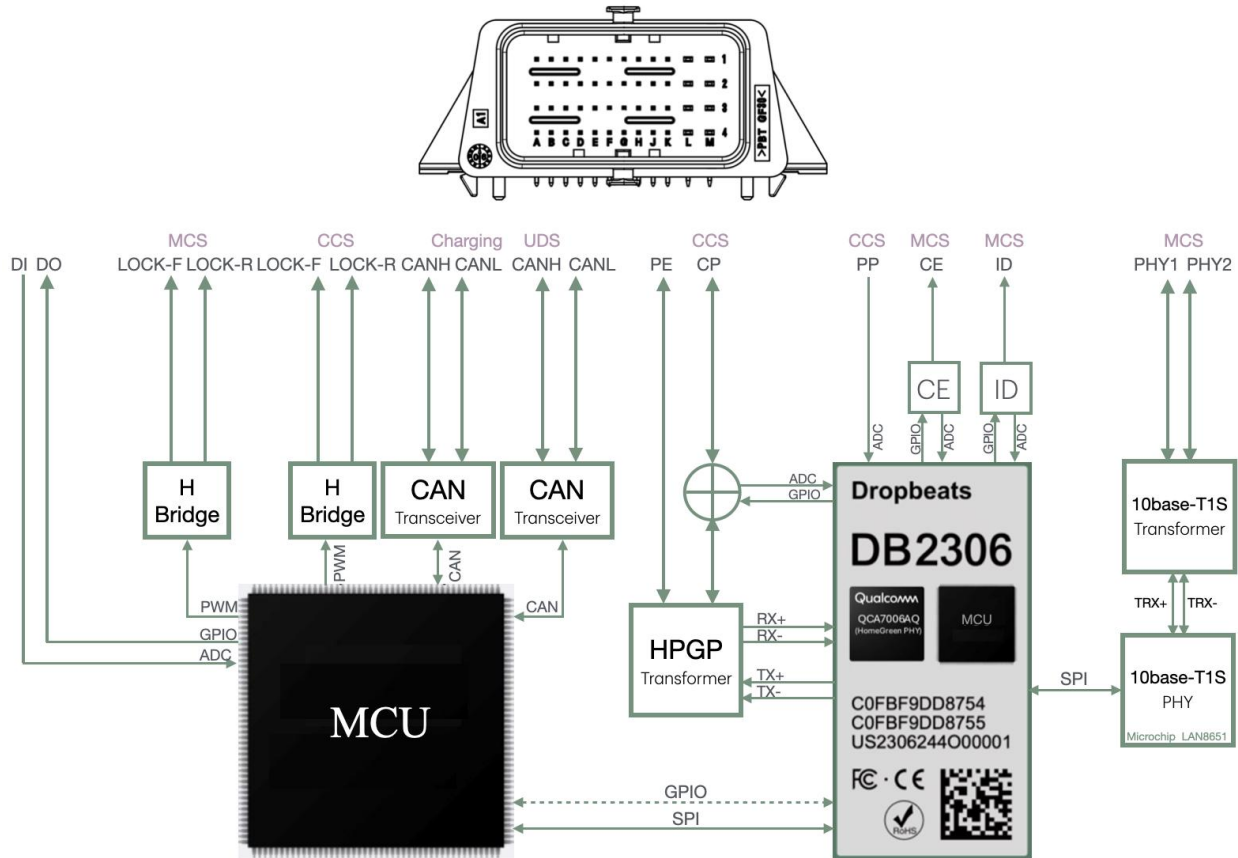


Figure 3: Diagram of DB-EVCC-560 Product

Note:

- Only one of CCS or MCS operates at a time; the DB-EVCC-560 automatically detects the plug type and initiates the charging process accordingly.

5 TYPICAL SYSTEM WIRING SCENARIO

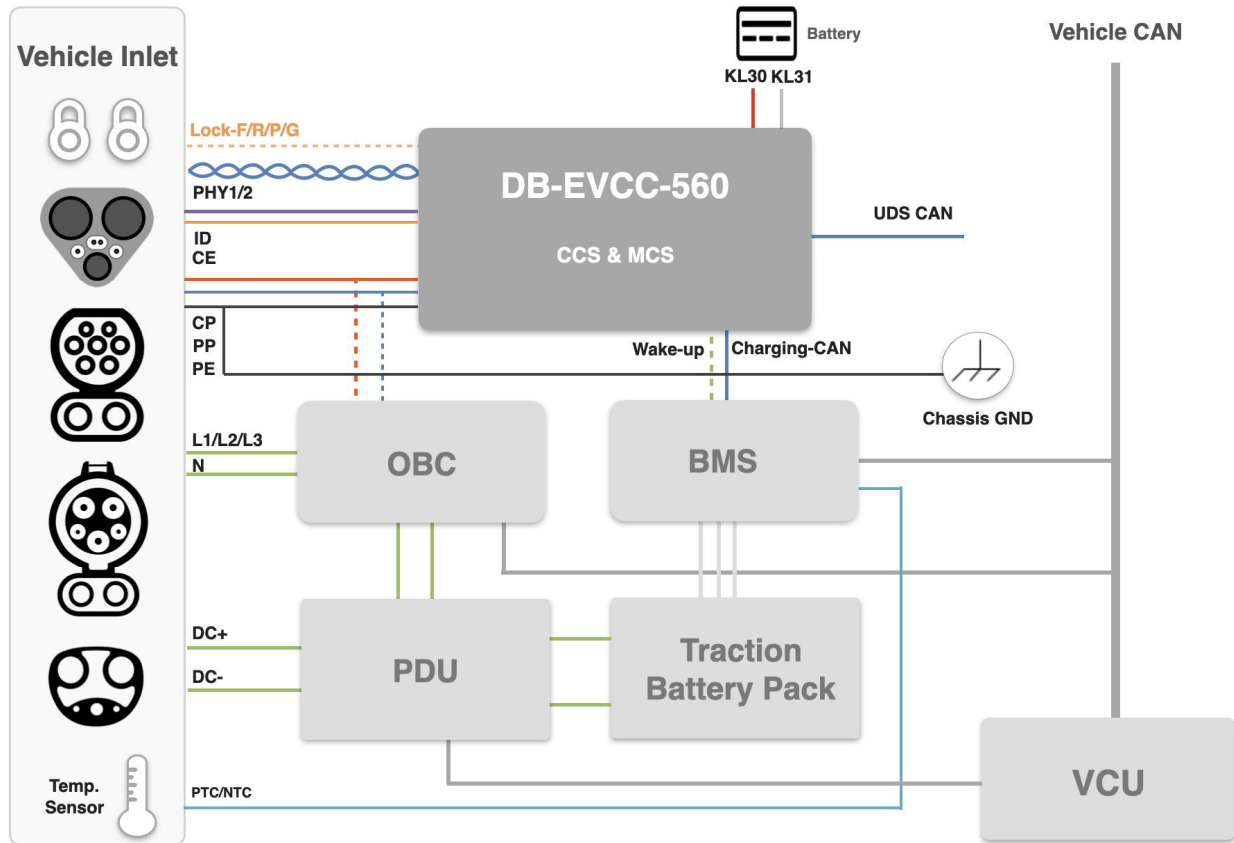


Figure 5: Typical System Wiring Scenario of DB-EVCC-560

Note:

- 1 If MCS functionality is not required, leave the MCS-related pins unconnected.
- 2 If Locker functionality is not required, leave the Locker-related pins unconnected.

6 ORDER INFORMATION

Order Code	HW	SW
DB-EVCC-560	2.0.2	CCS/MCS Combo

Legal Information

Copyright

Copyright 2024 Dropbeats Technology Co., Ltd. All rights reserved.

The information in this document is proprietary and confidential to Dropbeats Technology Co., Ltd., and for its customers' internal use. No part of this document may be reproduced or redistributed in any form without the express written consent of Dropbeats Technology Co., Ltd.

Disclaimer

None of the information contained in this document constitutes an express or implied warranty by Dropbeats Technology Co., Ltd. as to the sufficiency, fitness or suitability for a particular purpose of any such information or the fitness, or suitability for a particular purpose, merchantability, performance, compatibility with other parts or systems, of any of the products of Dropbeats Technology Co., Ltd., or any portion thereof, referred to in this document. Dropbeats Technology Co., Ltd. expressly disclaims all representations and warranties of any kind regarding the contents or use of the information, including, but not limited to, express and implied warranties of accuracy, completeness, merchantability, fitness for a particular use, or non-infringement.

In no event will Dropbeats Technology Co., Ltd. be liable for any direct, indirect, special, incidental or consequential damages, including, but not limited to, lost profits, lost business, or lost data resulting from any use of or reliance upon the information, whether or not Dropbeats Technology Co., Ltd. has been advised of the possibility of such damage.

Contacting Dropbeats Technology

Dropbeats Technology

123 Juli Road, Building 4, Shanghai, China

Tel: +86 (21) 5085-0752

Fax: +86 (21) 5085-0753

Document Information: document@drop-beats.com

Corporate Information: info@drop-beats.com

Technical Support: apps@drop-beats.com

Web Site: <https://www.drop-beats.com>

Revision History

Revision	Date	Descriptions
1.0.0	2025.10.09	Initial
1.0.1	2025.10.20	Updated Dimension.
1.0.2	2025.11.06	Revised description for PIN 3L to correct a typo.