

## CCS CCSEB Evaluation Board with different CCS Charge Controllers

The CCSEB Evaluation Board can be assembled with different CCS Charge controllers. The CCS Charge Controllers CCS9310B2, CCS9505FK and CCS9620 work with the CCS charge principle.

In comparison to the CCS9310B2 the controllers CCS9505FK and CCS9620 offer some Special Functions, e.g. Charge Mode Selection (Charge speed), DC-Pin, Serial Data Out, etc. Because of that, the CCS Charge Controllers are not exactly pin compatible. The differences and pin configurations are listed in the following table.

### 1) Pin-Configurations

CCS9620		CCS9310B2		CCS9505FK	
1 Buzzer	10 TxD	1 Buzzer	10 F.U.	1 Buzzer	10 TxD
2 Watch	11 F.U.	2 Watch	11 F.U.	2 Watch	11 Out3
3 F.U.	12 E/A	3 F.U.	12 F.U.	3 F.U.	12 Out4
4 RST	13 LED	4 RST	13 LED	4 RST	13 LED
5 GND	14 VDD	5 GND	14 VDD	5 GND	14 VDD
6 MT1	15 CLKOUT	6 F.U.	15 CLKOUT	6 MT1	15 CLKOUT
7 MT2	16 OSC	7 F.U.	16 OSC	7 MT2	16 OSC
8 BE	17 INTOUT	8 F.U.	17 INTOUT	8 BE	17 INTOUT
9 LE	18 INTIN	9 F.U.	18 INTIN	9 LE	18 INTIN

F.U. Factory Used, Do not connect F.U. Pins

### 2) Special Functions

For CCS9505FK and CCS9620

#### 2.1) Pin Description

Pin 6, 7, 8, 9, 10, 11, 12 are used for additional functions compared with the CCS9310B2.

Pin 6, 7, 8, 9 are Input-Pins, Pin 10, 11, 12 are Output-Pins.

**Pin 6, 7, 8, 9 are needed for the charging function and must be connected!!!!**

Pin 11 Out 3: Status Output (CCS9505FK)

Pin 6 MT1: Charge Mode (Charge Speed)

Pin 12 Out 4: Status Output

Pin 7 MT2: Charge Mode (Charge Speed)

Table 1: Charging Function (CCS9505FK)			Table 2: Charge Mode, Capacity Range				
Status 4 Pin 12	Status 3 Pin 11	definition	MT 2 Pin 7	MT 1 Pin 6	cycle time	charge current	typ. charge time
0	0	Standby (no battery)	0	0	15 sec	1/2C-2C	1h
0	1	Charging process	0	1	30 sec	1/4C-1C	2h
1	0	Battery defective	1	0	45 sec	1/6C-2/3C	3h
1	1	Charge OK (Battery full)	1	1	60 sec	1/8C-1/2C	4h

0=low (GND) 1=high (VDD)

Pin 8 BE: Buzzer Enable a) to VDD Buzzer sound  
b) to GND no Buzzer sound

Pin 9 LE: Charge Enable a) to VDD, charge process like CCS9310B2  
b) to GND, charge process stops. When LE is connected to VDD again, the battery is treated as a new, just connected battery.

Pin 10 TxD: Serial Data Out for graphical presentation of the charging curve via BTI-Adapter

Pin 12 E/A (CCS9620): Charge ON/OFF DC-Pin for DC-Power-Supply

**Comments:** Our aim is to help you best in the design of superior chargers with CCS-technology. This Application Note was carefully composed. However, according to the wide range of solutions not all aspects and possibilities can be covered by this publication. Furthermore errors cannot be completely excluded and we do not provide any responsibility for the given applications. Therefore we welcome your response comments and suggestions for further improving our CCS-Application Notes. **Thank you!**

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