

- Wide 4.2V-20V Input Voltage Range
- Wide 1V-15V PVIN Input Voltage Rang
- Up to 15W Power Transfer
- Integrated Full-Bridge Power Stage with 16-Rdson of Power Transfer
- Integrated 5V-100mA LDO
- Optimized for EMI Reduction
- Integrated 33KHz-133KHz programmable frequency clock generator with ±2% accuracy
- Integrated amplifier for silicon photodiode signal demodulation
- Input Under-Voltage Lockout
- Over Current Protection
- Over Temperature Protection
- 3mm*3mm QFN-15L Package
- General Wireless Power Transmitters
- Proprietary Wireless Transmitters

The SCT63141 is a highly integrated Power Management IC allows achieving high performance, high efficiency and cost effectiveness of wireless power transmitter system to support up to 15W power transfer.

This device integrates a 5V-LDO, 4-MOSFETs full bridge power stage, gate drivers, a high-precision 50% duty clock generator with programmable frequency for configuring the transmitters output power easily, and also an amplifier for silicon photodiode signal demodulation to provide total solution with single chip.

The proprietary gate driving scheme optimizes the performance of EMI reduction to save the system cost and design. The build-in 5V low dropout regulator LDO can provide power supplies to transmitter controller and external circuitries.

The converter requires a minimum number of external components and is available in a QFN (3mmx3mm) package.

| Board Number | IC Number |
|---------------|-----------|
| EV63141-B-02A | SCT63141 |

| Table 1. Performance | Specifications are at TA = 25°C | |
|----------------------|---------------------------------|--------|
| Parameter | Condition | Value |
| Input Voltage | PVIN DC up to 15V | 5V. 9V |



Evaluation board EV63141-B-02A is easy to set up to evaluate the performance of SCT63141 wireless power transmitter IC. Refer to Figure 1 for proper measurement equipment setup and follow the procedure below:

- 1. Input Connection:
 - J3, J2: Input terminal. Connect the power supply to the input of converter.
- 2. Clock frequency:
 - R21/R2: Adjust the clock frequency.

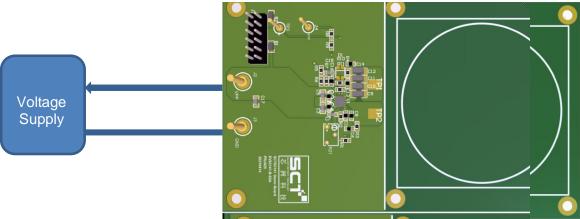


Figure 1. Proper Supply, Load and Measurement Equipment Setup

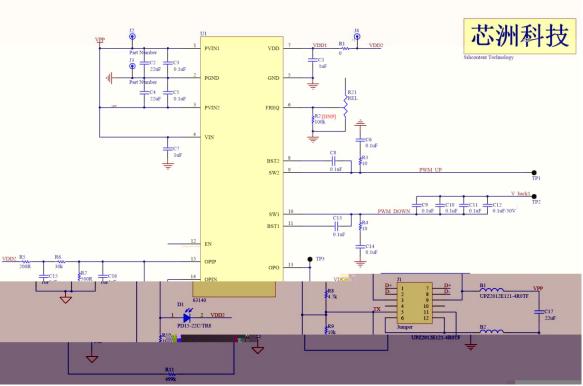


Figure 2. Evaluation Board Schematic



Table 2. Bills of Materials

| Manufacture | Comment | Designator | Description | Quantity |
|------------------|-------------------|-----------------------------|---------------------------------------|----------|
| Sunlord | UPZ2012E121-4R0TF | B1, B2 | UPZ2012E121-4R0TF | 2 |
| Wurth Electronik | 885 012 106 022 | C1, C7, C16 | CAP, CERM, 1uF, 25V, 10%, X7R,0603, | 3 |
| Wurth Electronik | 885 012 109 014 | C2, C4, C17 | CAP, CERM, 22uF, 25V, 5%, X7R,0805, | 3 |
| Wurth Electronik | 885 012 206 071 | C3, C5, C6, C8, C13, C14 | CAP, CERM, 0.1uF, 25V, 5%, X7R, 0603 | 6 |
| Wurth Electronik | 885012208118 | C9, C10, C11, C12 | CAP, CERM, 0.1uF, 100V, 5%, NP0, 1206 | 4 |
| Wurth Electronik | Capacitor | C15 | CAP, CERM, 1uF, 10V, 5%, X7R, 0603 | 1 |
| EVERLIGHT | PD15-22C/TR8 | D1 | Pin Photodiode | 1 |
| Ckmtw | Jumper | J1 | Through Hole, P=2.54mm 2*6P | 1 |
| | Terminal_2.1 | J2, J3 | Terminal_2.1 | 2 |
| | Terminal_1.1 | J4,TP3 | Terminal_1.1 | 2 |
| YAGEO | RC0603FR-070RL | R1 | Resistor, 0, 1%, 0.1W, 0603 | 1 |
| YAGEO | RC0603FR-0710RL | R3, R4 | Resistor, 10, 1%, 0.1W, 0603 | 2 |
| YAGEO | RC0603FR-07200RL | R5 | Resistor, 200, 1%, 0.1W, 0603 | 1 |
| YAGEO | RC0603FR-0730KL | R6 | Resistor, 30k, 1%, 0.1W, 0603 | 1 |
| YAGEO | RC0603FR-07500RL | R7 | Resistor, 500, 1%, 0.1W, 0603 | 1 |
| YAGEO | RC0603FR-074K7L | R8 | Resistor, 4.7k, 1%, 0.1W, 0603 | 1 |
| YAGEO | RC0603FR-0710K2L | R9, R10 | Resistor, 10k, 1%, 0.1W, 0603 | 2 |
| YAGEO | RC0603FR-07499KL | R11 | Resistor, 499k, 1%, 0.1W, 0603 | 1 |
| YAGEO | Not Install | R21 | Resistor, 100k, 1%, 0.1W, 0603 | 1 |
| | Terminal_2.1 | TP1, TP2 | Terminal_2.1 | 2 |
| SCT | SCT63140 | U1 | Wireless charger PMIC | 1 |



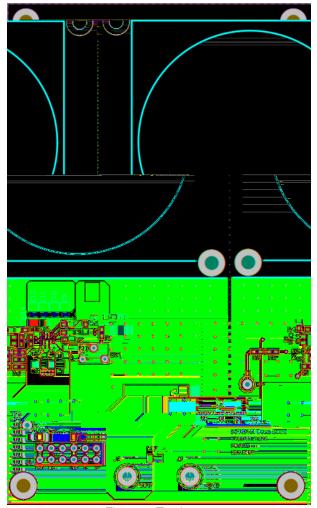


Figure 3. Top Layer

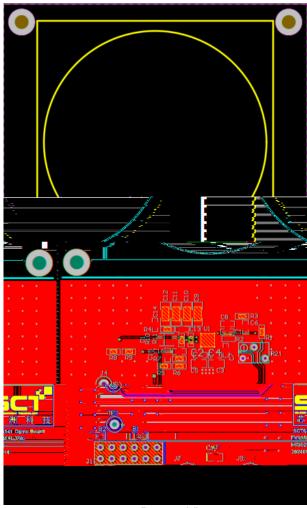
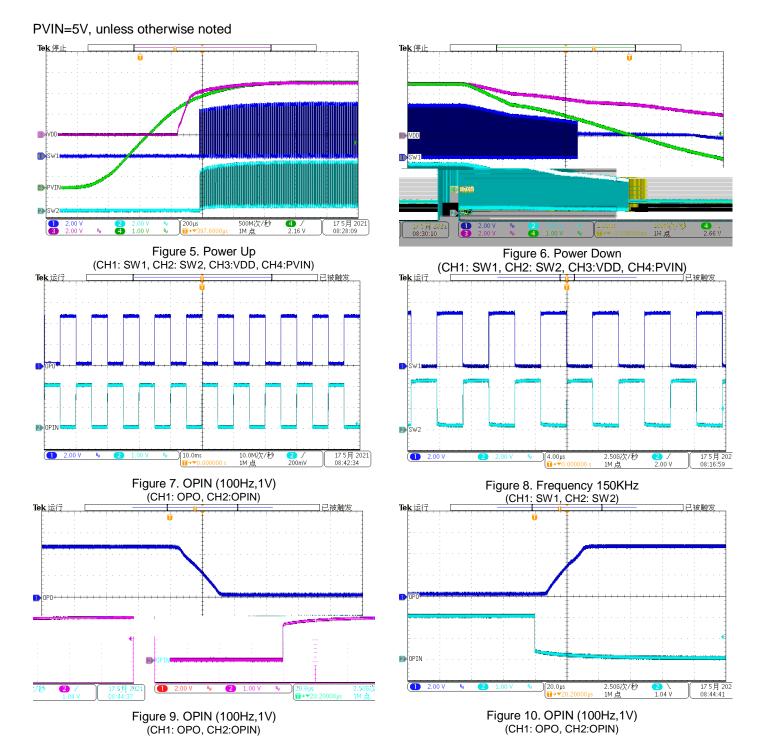


Figure 4. Bottom View







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