- 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 transmitter s 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

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.

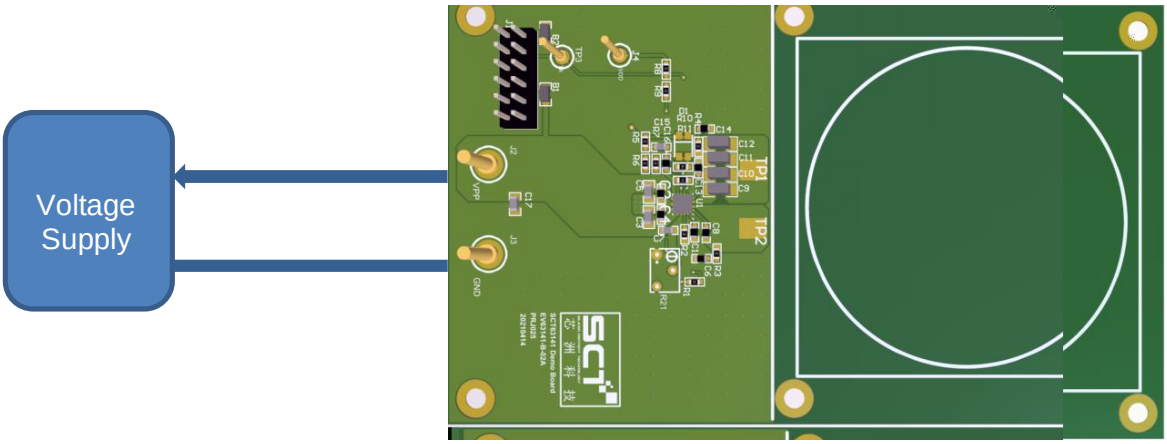

Figure 1. Proper Supply, Load and Measurement Equipment Setup

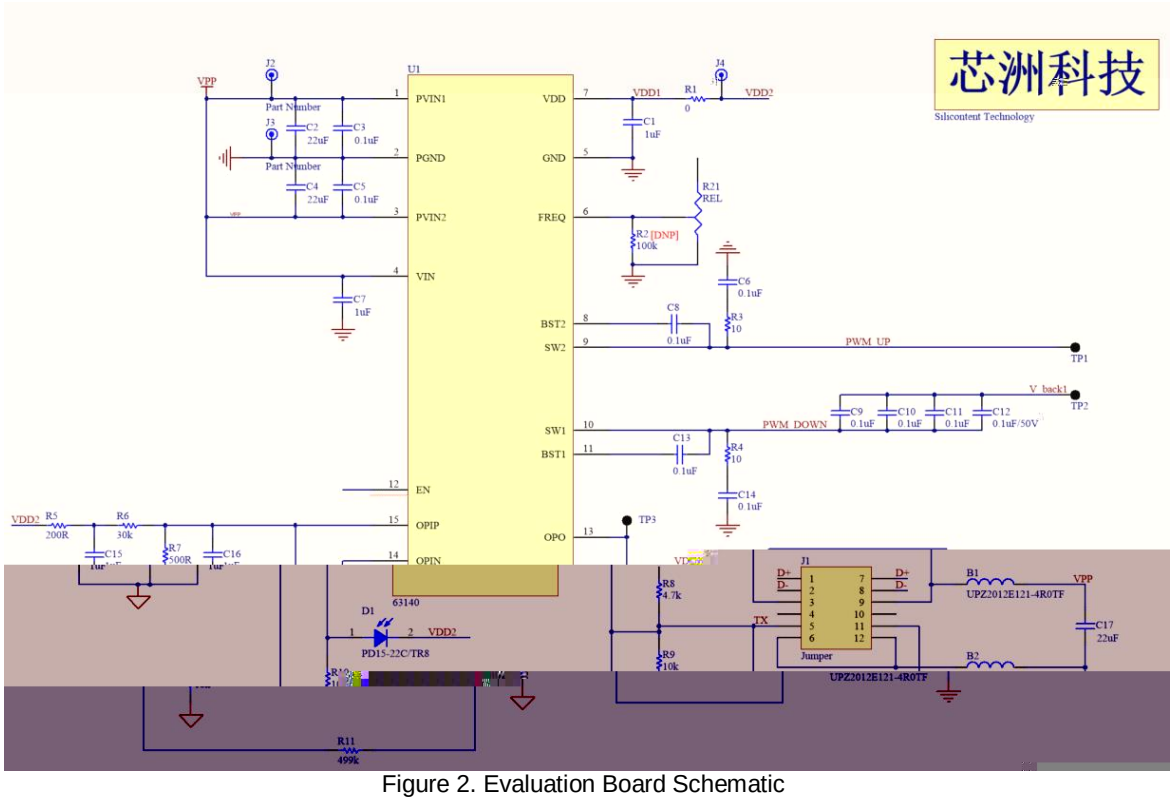

Figure 2. Evaluation Board Schematic

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

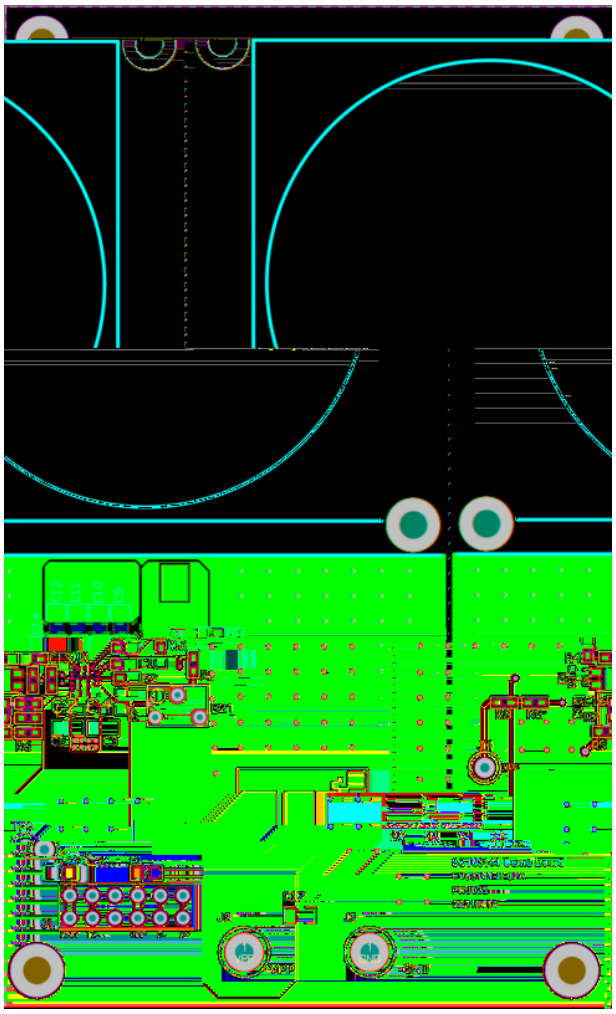

Figure 3. Top Layer

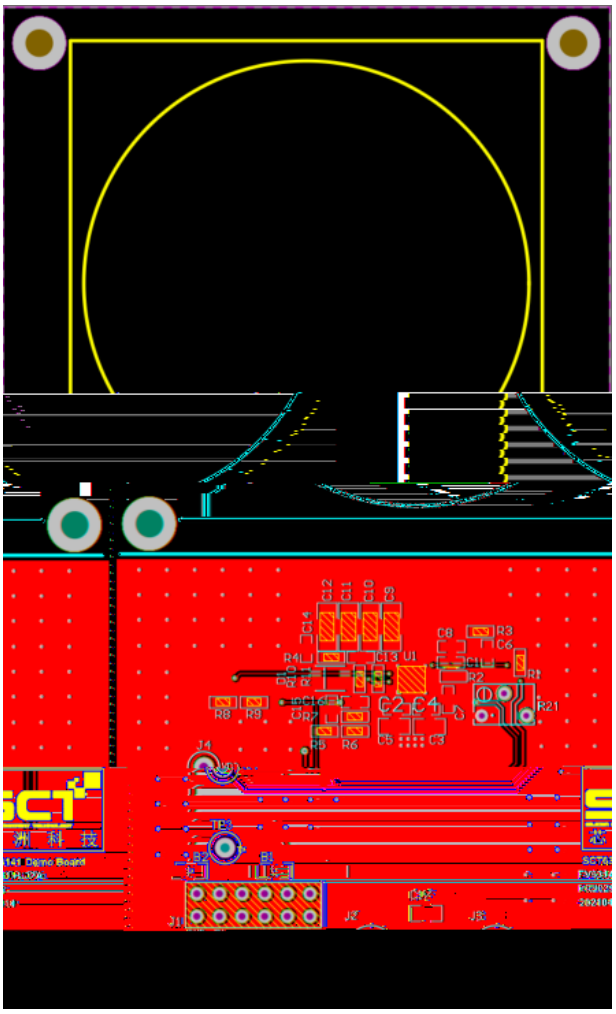

Figure 4. Bottom View

PVIN=5V, unless otherwise noted

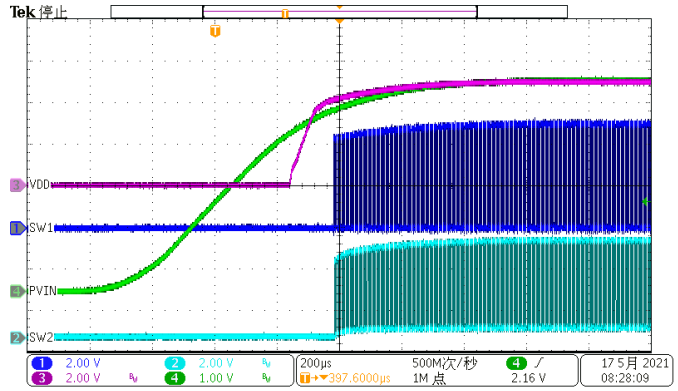

Figure 5. Power Up
(CH1: SW1, CH2: SW2, CH3:VDD, CH4:PVIN)

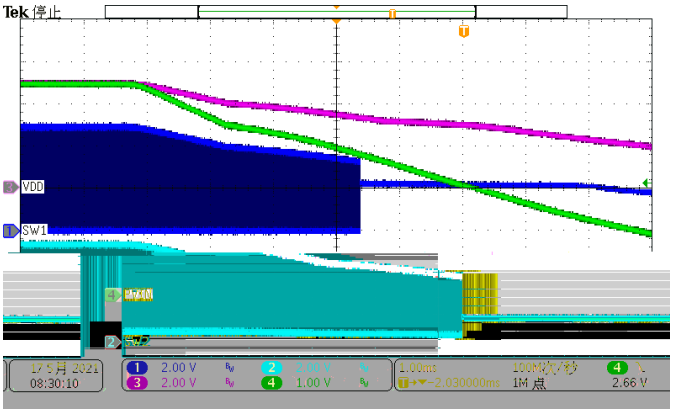

Figure 6. Power Down
(CH1: SW1, CH2: SW2, CH3:VDD, CH4:PVIN)

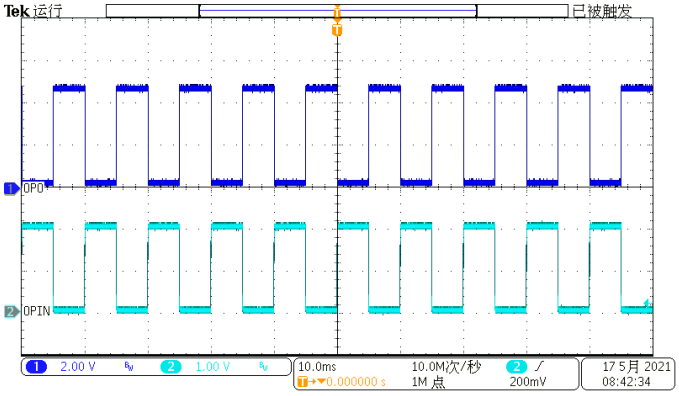

Figure 7. OPIN (100Hz,1V)
(CH1: OPO, CH2:OPIN)

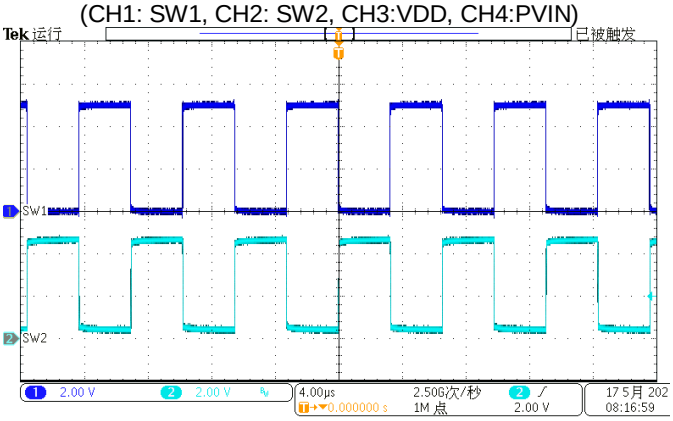

Figure 8. Frequency 150KHz
(CH1: SW1, CH2: SW2)

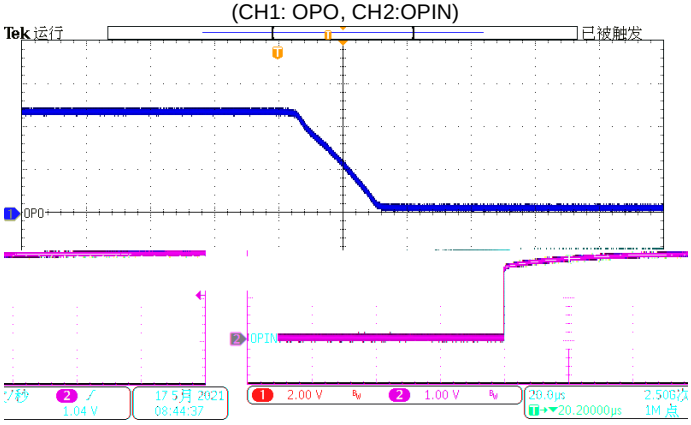

Figure 9. OPIN (100Hz,1V)
(CH1: OPO, CH2:OPIN)

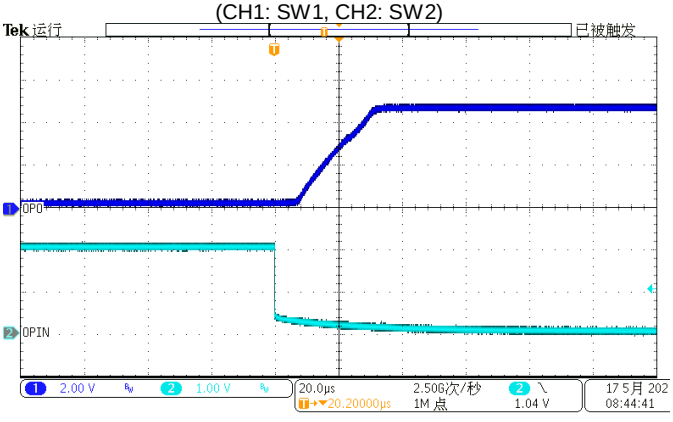

Figure 10. OPIN (100Hz,1V)
(CH1: OPO, CH2:OPIN)

IMPORTANT NOTICE

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