

FCC RF EXPOSURE
CERTIFICATION TEST REPORT

For

Safety Inter lock

MODEL NUMBER: TBL1-D0MP0-SE, TBLa-bcdefg-SE (“a” can be 1-2, “b” can be D or H, “c” can be 0-1, “d” can be M or U, “e” can be P or N, “f” can be 0-9 or A-H, “g” can be None or E, “SE” can be None or SE)

REPORT NUMBER: 4791216054-1-RF-2

ISSUE DATE: April 4, 2026

FCC ID: 2A82Y-TBL

Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	April 4, 2026	Initial Issue	

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	4
2. TEST METHODOLOGY	5
3. FACILITIES AND ACCREDITATION	5
4. DESCRIPTION OF EUT	6
5. REQUIREMENT	7

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Shenzhen Tongchuang Mechatronics Co.,Ltd.
Address: No.501, Building 8, Nangang Second Industrial Zone, 1026#
SongBai Road, Xili Town, Nanshan District, 518055 Shenzhen,
PEOPLE'S REPUBLIC OF CHINA

Manufacturer Information

Company Name: Shenzhen Tongchuang Mechatronics Co.,Ltd.
Address: No.501, Building 8, Nangang Second Industrial Zone, 1026#
SongBai Road, Xili Town, Nanshan District, 518055 Shenzhen,
PEOPLE'S REPUBLIC OF CHINA
Company Name: Shenzhen Tongchuang Mechatronics Co.,Ltd.

EUT Information

EUT Name: Safety Inter lock
Model: TBL1-D0MP0-SE
Serial Model: TBLa-bcdefg-SE ("a" can be 1-2, "b" can be D or H, "c" can be 0-1, "d" can be M or U, "e" can be P or N, "f" can be 0-9 or A-H, "g" can be None or E, "SE" can be None or SE)
Brand: 
施 莱 格
Sample Received Date: March 3, 2026
Sample Status: Normal
Sample ID: 9488933
Date of Tested: March 23, 2026 to April 4, 2026

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
447498 D01 General RF Exposure Guidance v06	PASS

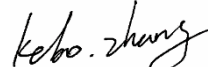
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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB447498 D01 General RF Exposure Guidance v06.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules. ISED (Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. VCCI (Registration No.: C-20202, G-20240, R-20248 and T-20202) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber E, the VCCI registration No. is G-20240 and R-20248 Shielding Room F, the VCCI registration No. is C-20202 and T-20202
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Note 1:

All tests measurement facilities use to collect the measurement data are located at Room 101, Building 2, No.4, Information Road, Songshan Lake, Dongguan, Guangdong, China.

4. DESCRIPTION OF EUT

EUT Name	Safety Inter lock	
Model	TBL1-D0MP0-SE	
Serial Model	TBLa-bcdefg-SE (“a” can be 1-2, “b” can be D or H, “c” can be 0-1, “d” can be M or U, “e” can be P or N, “f” can be 0-9 or A-H, “g” can be None or E, “SE” can be None or SE)	
Model Difference	The difference lies only the model number	
Product Description	Operation Frequency	125 kHz to 135 kHz
Antenna type	Loop Antenna	
Ratings	DC 24V	

5. REQUIREMENT

LIMIT AND CALCULATION METHOD

According to KDB447498 D01 General RF Exposure Guidance v06, clause 4.3.1.c) 1):

For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

- 1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$
- 2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$
- 3) SAR measurement procedures are not established below 100 MHz.

Appendix C

SAR Test Exclusion Thresholds for < 100 MHz and < 200 mm

Approximate SAR test exclusion power thresholds at selected frequencies and test separation distances are illustrated in the following table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

MHz	< 50	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	mm
100	237	474	481	487	494	501	507	514	521	527	534	541	547	554	561	567	mW
50	308	617	625	634	643	651	660	669	677	686	695	703	712	721	729	738	
10	474	948	961	975	988	1001	1015	1028	1041	1055	1068	1081	1095	1108	1121	1135	
1	711	1422	1442	1462	1482	1502	1522	1542	1562	1582	1602	1622	1642	1662	1682	1702	
0.1	948	1896	1923	1949	1976	2003	2029	2056	2083	2109	2136	2163	2189	2216	2243	2269	
0.05	1019	2039	2067	2096	2125	2153	2182	2211	2239	2268	2297	2325	2354	2383	2411	2440	
0.01	1185	2370	2403	2437	2470	2503	2537	2570	2603	2637	2670	2703	2737	2770	2803	2837	

CALCULATED RESULTS

Mode	Maximum Operating Current (mA)	Maximum Operating Voltage (V)	Maximum Output Power (mW)	Exemption Limit (mW)
125kHz	300	5.8	1740	2213

Note:

1. Maximum Operating Current (mA) comes from “Maximum AC peak current on ANT1 and ANT2 pads 100 kHz duty cycle 50%” in the chip datasheet.
2. Maximum Operating Voltage (V) comes from “Max. voltage other pads” in the chip datasheet ($V_{DD} \text{ Max} + 0.3V = 5.5 + 0.3 = 5.8V$).
3. The Exemption Limit (mW) = SAR Test Exclusion Thresholds@100MHz * $[1 + \log(100/f(\text{MHz}))]$ = $567 * [1 + \log(100/0.125)] = 2213\text{mW}$
4. The calculated distance is 190mm. (The customer stated that the product's working distance from the human body is greater than 20cm.)

Chip datasheet screenshot 1:

Absolute Maximum Ratings

Parameter	Symbol	Conditions
Storage temperature	T_{STO}	-55 to +150°C
Maximum voltage at V_{DD}	V_{DDmax}	$V_{SS}+6V$
Minimum voltage at V_{DD}	V_{DDmin}	$V_{SS}-0.3V$
Max. voltage other pads	V_{MAX}	$V_{DD}+0.3V$
Min. voltage other pads	V_{MIN}	$V_{SS}-0.3V$
Max. junction temperature	T_{JMAX}	+125°C
Electrostatic discharge max. to MIL-STD-883C method 3015 against V_{SS}	V_{ESD}	4000V
Electrostatic discharge max. to MIL-STD-883C method 3015 (only for pins ANT1 and ANT2) against V_{SS}	V_{ESD_ANT}	8000V
Maximum Input/Output current on all pads except V_{DD} , V_{SS} , DV_{DD} , DV_{SS} , ANT1, ANT2, RDY/CLK	I_{IMAX} I_{OMAX}	10mA
Maximum AC peak current on ANT1 and ANT2 pads 100 kHz duty cycle 50%	I_{ANTmax}	300mA

Stresses above these listed maximum ratings may cause permanent damages to the device. Exposure beyond specified operating conditions may affect device reliability or cause malfunction.

Chip datasheet screenshot 2:

Operating Conditions

Parameter	Symb	Min	Typ	Max	Units
Operating junction temperature	T_J	-40		+110	°C
Supply voltage	V_{DD}	4.1	5	5.5	V
Antenna circuit resonant frequency	F_{RES}	100	125	150	kHz
AC peak current on ANT1 & ANT2 pads	I_{ANT}			250	mA
C_{FCAP}		*	10	*	nF
C_{DEC}		*	100	*	nF
C_{DC2}		*	6.80	*	nF
C_{AGND}		100		220	nF
Package thermal resistor SO16	$R_{th\ j-a}$	69	70	71	°C/W

END OF REPORT