



EMC Test Report

Related to CE Directive: 2014/30/EU (Electromagnetic Compatibility)

Report Number: KT22071003ER

Date: July 10, 2022

Applicant : LIAOCHENG DONGCHANGFU KETAI LASER
EQUIPMENT CO.,LTD
A13-1 Luxi International Pioneer Park, 150 meters west

Address : Haiyuan Road, Yansi Street, Dongchangfu District,
Liaocheng City, Shandong Province, China

Manufacturer : LIAOCHENG DONGCHANGFU KETAI LASER
EQUIPMENT CO.,LTD
A13-1 Luxi International Pioneer Park, 150 meters west

Address : Haiyuan Road, Yansi Street, Dongchangfu District,
Liaocheng City, Shandong Province, China

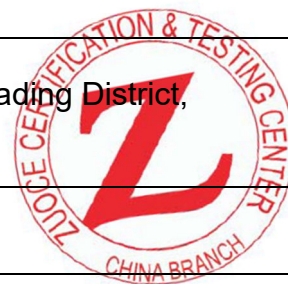
Product : Laser Welding/Cleaning Machine

**Brand name/
Trade mark** : /

Model(s) : KT-50, KT-60, KT-100, KT-150, KT-200, KT-400,
KT-500, KT-1000, KT-1500, KT-2000, KT-3000

Standard(s) : EN IEC 61000-6-2:2019
EN IEC 61000-6-4:2019

Registered Number		
Applicant	LIAOCHENG DONGCHANGFU KETAI LASER EQUIPMENT CO.,LTD	
Applicant Address	A13-1 Luxi International Pioneer Park, 150 meters west Haiyuan Road, Yansi Street, Dongchangfu District, Liaocheng City, Shandong Province, China	
Trade mark		
Machinery		
Product Name	Laser Welding/Cleaning Machine	
Main Model	KT-1500	
Series Model(s)	KT-50, KT-60, KT-100, KT-150, KT-200, KT-400, KT-500, KT-1000, KT-1500, KT-2000, KT-3000	
File No.	KT22071002ER	
Directive	2014/35/EU Electromagnetic Compatibility Directive	
Standards Compliance	EN IEC 61000-6-2:2019 EN IEC 61000-6-4:2019	
Date of Testing	July 10, 2022	
Testing Laboratory	Zuoce Certification and Testing Center. ROOM 318 Building 6, No.58 Hexuan Road, Jiading District, Shanghai, China, 201803 Tel: 086-21-39922156 Email: info@zuoce.org	
Tested by	Stone Lee	<i>Stone Lee</i>
Approved by	Jack Yang	<i>Jack Yang</i>



10.3.3 TEST PROCEDURE

- a. The Product and support units were located on a non-conductive table above ground reference plane.
- b. A 0.5m-long power cord was attached to Product during the test.

10.3.4 RESULTS & PERFORMANCE

Product : LASER WELDING/CLEANING MACHINE

Model/Type reference : KT-1500

Power : AC 230V/50Hz **Temperature** : 22°C

Mode : Normal **Humidity** : 50%

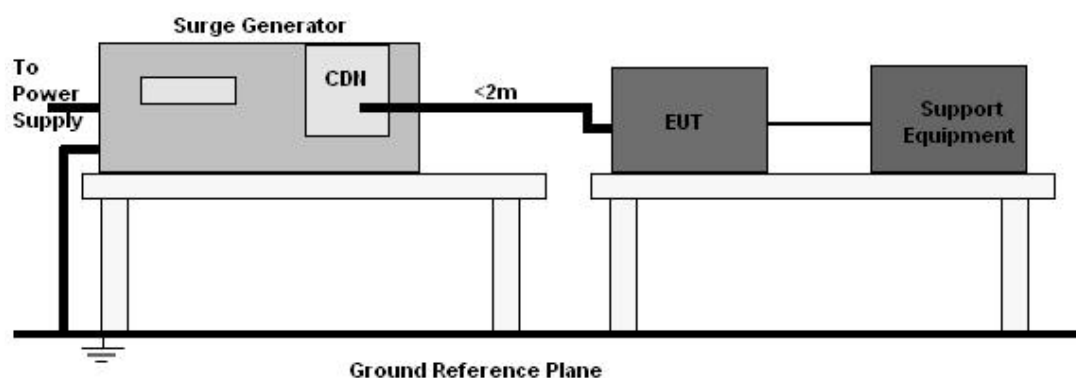
Coupling	Voltage (kV)	Polarity	Required Level	Performance Criterion
L + N +PE	2	±	B	A

10.4 SURGES

10.4.1 TEST SPECIFICATION

Basic Standard : EN 61000-6-2 & IEC 61000-4-5
Test Port : Input AC power ports:
Wave-Shape : Open Circuit Voltage - 1.2 / 50 us
Phase Angle : 0° / 90° / 180° / 270°
Pulse Repetition Rate : 1 pulse / min.
Test Events : 5 pulses (positive & negative) for each polarity

10.4.2 BLOCK DIAGRAM OF TEST SETUP



10.4.3 TEST PROCEDURE

- The surge is to be applied to the Product power supply terminals via the capacitive coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave.
- The power cord between the Product and the coupling/decoupling networks shall be 2 meters in length (or shorter). Interconnection line between the Product and the coupling/decoupling networks shall be 2 meters in length (or shorter).

10.4.4 RESULTS & PERFORMANCE

Product : LASER
WELDING/CLEANING
: MACHINE
Model/Type reference : KT-1500
Power : AC 230V/50Hz
Mode : Normal
Temperature : 22°C
Humidity : 50%

Coupling Line	Voltage (±kV)	Phase Angle	Required Level	Performance Criterion
L - N	1	0°, 90°, 180°, 270°	B	A
L - PE	2	0°, 90°, 180°, 270°	B	A
N - PE	2	0°, 90°, 180°, 270°	B	A

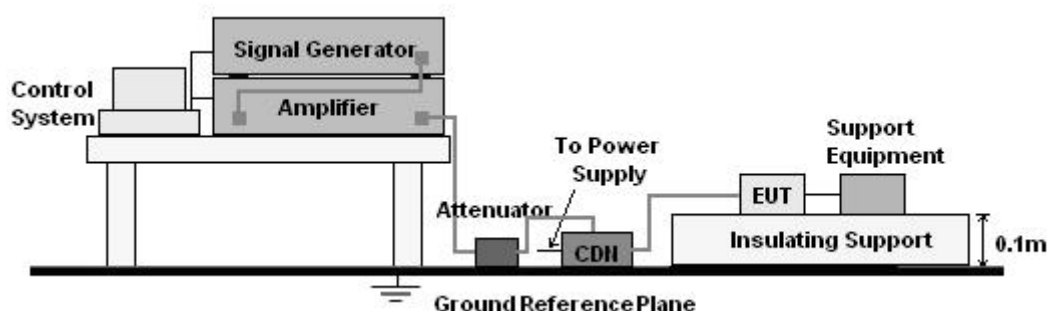
10.5 RADIO-FREQUENCY COMMON MODE

10.5.1 TEST SPECIFICATION

Basic Standard : EN 61000-6-2 & IEC 61000-4-6
Test Port : Input AC ports
Step Size : 1%
Modulation : 1kHz, 80% AM
Dwell Time : 1 second

10.5.2 BLOCK DIAGRAM OF TEST SETUP

For AC ports:



10.5.3 TEST PROCEDURE

For AC power ports:

- The Product and support units were located at a ground reference plane with the interposition of a 0.1 m thickness insulating support and the CDN was located on GRP directly.
- The frequency range is swept from 150 kHz to 80MHz, with the signal 80% amplitude modulated with a 1 kHz sine wave. The rate of sweep did not exceed 1.5×10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
- The dwell time at each frequency shall be not less than the time necessary for the Product to be able to respond.

10.5.4 RESULTS & PERFORMANCE

Product : LASER
WELDING/CLEANING
MACHINE

Model/Type reference : KT-1500

Power : AC 230V/50Hz **Temperature** : 22°C

Mode : Normal **Humidity** : 50%

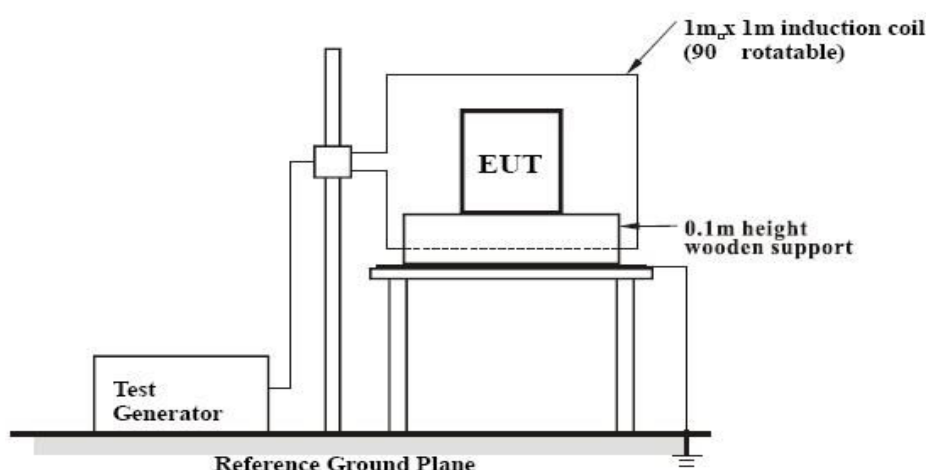
Inject Line	Frequency (MHz)	Voltage Level (V r.m.s.)	Required Level	Performance Criterion
a.c. Port	0.15 - 80	10	A	A

10.6 POWER-FREQUENCY MAGNETIC FIELDS

10.6.1 TEST SPECIFICATION

Basic Standard : EN 61000-6-2 & IEC 61000-4-8
Test Port : Enclosure port
Power Frequency : 50Hz / 60Hz
Duration : 1 Min
Direction : X axis Y axis Z axis

10.6.2 BLOCK DIAGRAM OF TEST SETUP



10.6.3 TEST PROCEDURE

- The Product and support units were located on a table, 0.8m away from ground floor.
- The Product is configured and connected to satisfy its functional requirements. It shall be place on the GRP with the interposition of a 0.1m thickness insulating support (e.g.dry wood)
- Setting the parameter of tests and then perform the test software of test simulator.
- The induction coil shall enclose the Product placed at its centre.

10.6.4 RESULTS & PERFORMANCE

Product : LASER WELDING/CLEANING MACHINE

Model/Type reference : KT-1500

Power : AC 230V/50Hz **Temperature** : 22°C

Mode : Normal **Humidity** : 50%

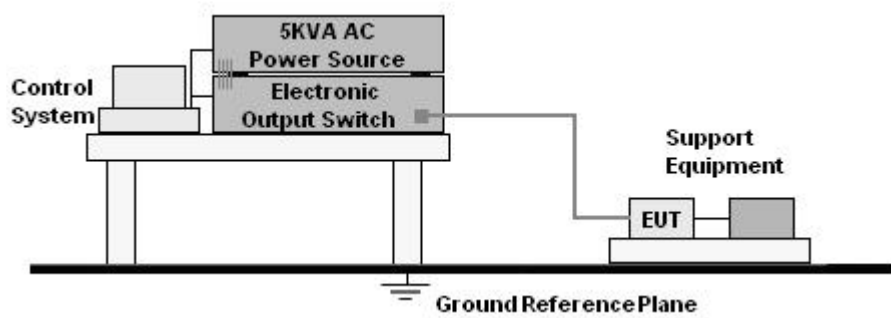
Direction	Field Strength (A/m)	Duration (Min)	Required Level	Performance criteria
X axis	30	5	A	A
Y axis	30	5	A	A
Z axis	30	5	A	A

10.7 VOLTAGE DIPS AND VOLTAGE INTERRUPTIONS

10.7.1 TEST SPECIFICATION

Basic Standard : EN 61000-6-2 & IEC 61000-4-11
Test Ports : Input AC power ports
Phase Angle : 0°, 180°

10.7.2 BLOCK DIAGRAM OF TEST SETUP



10.7.3 TEST PROCEDURE

- The Product and support units were located on a non-conductive table above ground floor.
- Set the parameter of tests and then perform the test software of test simulator.
- Conditions changes to occur at 0 degree crossover point of the voltage waveform.

10.7.4 RESULTS & PERFORMANCE

Product : LASER WELDING/CLEANING MACHINE

Model/Type reference : KT-1500

Power : AC 230V/50Hz

Temperature : 22°C

Mode : Normal

Humidity : 50%

Voltage Dips:

Test Level % UT	Reduction (%)	Duration (ms)	Required Level	Performance criteria
0	100	20	B	A
40	60	200	C	A
70	30	500	C	A

Voltage Interruptions:

Test Level % UT	Reduction (%)	Duration (ms)	Required Level	Performance criteria
≤5	>95	5000	C	C*

Remark*:The EUT shut down during the test, and it need to manuall press the control button to work normal after testing.

APPENDIX 1 PHOTOGRAPHS OF PRODUCT

