



測 試 報 告

TEST REPORT

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**TEST REPORT
FOR
SAE J1113-12 CAPACITIVE COUPLING CLAM TEST**

Report No.: **21-02-MAP-016**

Client: **TRON-E TECHNOLOGY CO., LTD.**
 Product: **Tron-e Vehicle Diagnostic Scan Tool System**
 Model No.: **Trone-AB101**
 Brand: **N/A**
 Manufacturer/supplier: **TRON-E TECHNOLOGY CO., LTD.**

Date test item received 2021/02/23
 Date test campaign completed 2021/04/19
 Date of issue 2021/04/23



The test result only corresponds to the tested sample. It is not permitted to copy this report, in part or in full, without the permission of the test laboratory.

Total number of pages of this test report: 9 pages

Test Engineer	Checked By	Approved By
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Laboratory Introduction: Electronics Testing Center, Taiwan is recognized, filed and mutual recognition arrangement as following:

- ① ISO/IEC 17025 : TAF(0371), NVLAP(Lab code: 200133-0), CBTL(TÜV SÜD)
- ② Recognized : BSMI, NCC, FCC(TW1112), ISED(Industry Canada Site # 2949A-2)
- ③ Filing : VCCI (C-13518, R-13177, G-10098, T-11682)
- ④ MRA : Australia, New Zealand, Singapore.

1 TEST REPORT CERTIFICATION

Client : Tron-e Technology Co., Ltd.
Address : 2F.-1, No. 268, Sec. 1, Gaotiezhanqian W. Rd., Zhongli Dist., Taoyuan City
320, Taiwan (R.O.C.)
Manufacturer : Tron-e Technology Co., Ltd.
Address : 2F.-1, No. 268, Sec. 1, Gaotiezhanqian W. Rd., Zhongli Dist., Taoyuan City
320, Taiwan (R.O.C.)
EUT : Tron-e Vehicle Diagnostic Scan Tool System
Brand Name : Tron-e
Model No. : Trone-AB101
Test Serial No. : N/A

Measurement Procedure Used : SAE J1113-12

We hereby certify that :

The testing described in this report has been carried out to the best of our knowledge and ability, and our responsibility is limited to the exercise of reasonable care. This certification is not intended to believe the sellers from their legal and/or contractual obligations.

The compliance test is only certified for the test equipment and the results of the testing report relate only to the item tested. The compliance test of this report was conducted in accordance with the appropriate standards. It's not intention to assure the quality and performance of the product.

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2 GENERAL INFORMATIONS AND DEFINITIONS

2.1 CLASSIFICATION OF EQUIPMENT FUNCTIONAL STATUS

Class A	All functions (*) device/system perform as designed during and after exposure to disturbance.
Class B	All functions (*) of a device / system perform as designed during exposure: however, one or more of them can go beyond specified tolerance. All function return automatically to within normal limits after exposure is removed. Memory functions shall remain Class A.
Class C	One or more functions (*) of do not perform as designed during exposure but returns automatically to normal operation after exposure is removed. This class captures the situation where JET's system is in standby mode and ready to be truned on by pressing the on/off button.
Class D	One or more functions (*) of a device / system does not perform as designed during exposure and does not return to normal operation until exposure is removed and the device system is reset by simple "operator / use" action.
Class E	One or more functions (*) of a device / system does not perform as designed during and after exposure and cannot be returned to proper operation without repairing or replacing the device / system.

(*) To be specified in the EMC test plan

2.2 TEST EQUIPMENT

Name	Trade Name	Model	Calibration Date	Recalibration Date	Test Item
Load Dump Generator	EM TEST	LD 200N	Nov. 28, 2020	Nov. 27, 2021	
Voltage Drop Generator	EM TEST	VDS 200N	Nov. 28, 2020	Nov. 27, 2021	
Ultra Compact Simulator	EM TEST	UCS 200N	Nov. 28, 2020	Nov. 27, 2021	
Multifunction AC/DC Power Source	EM TEST	AMP 200N	Nov. 28, 2020	Nov. 27, 2021	
Arbitrary GENERATOR	EM TEST	AutoWave	Nov. 28, 2020	Nov. 27, 2021	

3 CAPACITIVE COUPLING CLAM TEST

3.1 REFERENCE DOCUMENT

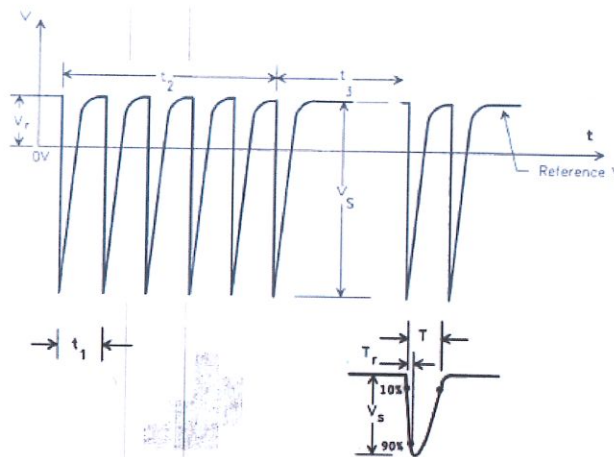
This test procedure is referenced to SAE J1113-12

3.2 TEST CONDITION

TABLE A1—PULSE AMPLITUDES FOR 12 V SYSTEMS

Test Pulse Note 1	Test Levels V_s Note 2 L1 (volts)	Test Levels V_s Note 2 L2 (volts)	Test Levels V_s Note 2 L3 (volts)	Test Levels V_s Note 2 L4 (volts)	Test Time
a	-10	-20	-40	-60	10 min
b	+10	+20	+30	+40	10 min

Pulse a



For 12V Systems

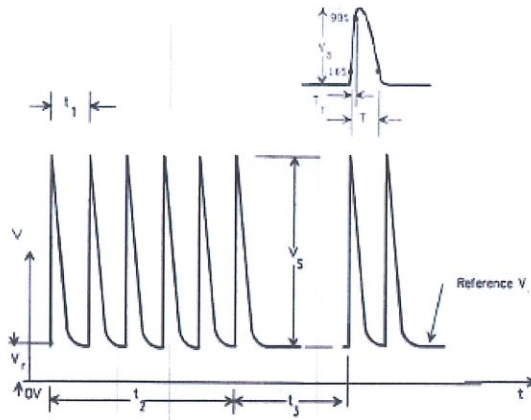
$V = 0$ to -60 V
 $R_{S1} = 50 \Omega$

For 24V Systems

$V = 0$ to -80 V
 $R_{S1} = 50 \Omega$

$T = 0.1 \mu s + 100/-0\%$
 $T_r = 5 ns \pm 50\%$
 $t_1 = 100 \mu s$
 $t_2 = 10 ms$
 $t_3 \geq 90 ms$

Pulse b



For 12V Systems

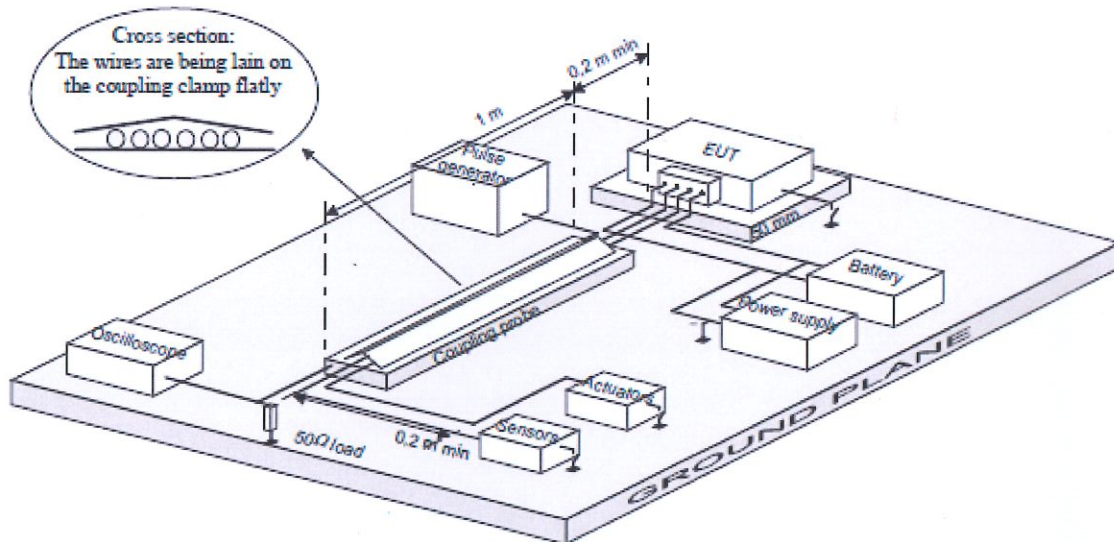
$V_s = 0 \text{ to } +40 \text{ V}$
 $R_1 = 50 \Omega$

For 24V Systems

$V_s = 0 \text{ to } +80 \text{ V}$
 $R_1 = 50 \Omega$

$T = 0.1 \mu\text{s} \pm 100 / -0\%$
 $T_r = 5 \text{ ns} \pm 50\%$
 $t_1 = 100 \mu\text{s}$
 $t_2 = 10 \text{ ms}$
 $t_3 \geq 90 \text{ ms}$

3.3 CAPACITIVE COUPLING CLAM TEST SUT-UP



3.4 CAPACITIVE COUPLING CLAM TEST DATA

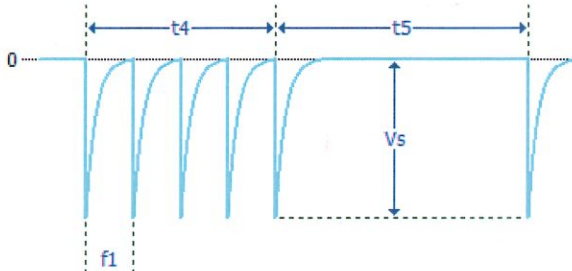
3.4.1 CCC PULSE A TEST DATA

Test Date: Apr. 19 2021

Test Specification	SAE J 1113-12 : CCC Pulse a		
Climatic Condition	Ambient Temperature	:	22 °C
	Pressure	:	989 mPa
	Humidity	:	60 %RH
	Application	:	5.0 V System

Test Procedure			
Pulse Name:	SAE J 1113-12 (2006-08) : CCC Pulse a		
Test generator:	UCS200N50	Software No.:	000715
		Serial No.:	P1523157867
Va (Alternator):	13.5 V	Current limit:	20 A

Test Setup		
Vs:	-20	V
f1:	10	kHz
t4:	10	ms
t5:	90	ms
tr:	5	ns
td:	100	ns
Ri:	50	Ohm
Coupling:	I/O + 50	Ohm
Test duration:	10	m



Test Result		
Test duration:	00:10:01	h
Result:	Test passed !	

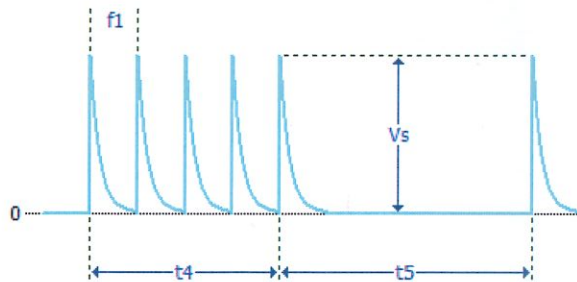
3.4.2 CCC PULSE B TEST DATA

Test Date: Apr. 19 2021

Test Specification	SAE J 1113-12 : CCC Pulse b		
Climatic Condition	Ambient Temperature	:	22 °C
	Pressure	:	989 mPa
	Humidity	:	60 %RH
	Application	:	5.0 V System

Test Procedure			
Pulse Name:	SAE J 1113-12 (2006-08) : CCC Pulse b		
Test generator:	UCS200N50	Software No.:	000715
		Serial No.:	P1523157867
Va (Alternator):	13.5 V	Current limit:	20 A

Test Setup		
Vs:	+20	V
f1:	10	kHz
t4:	10	ms
t5:	90	ms
tr:	5	ns
td:	100	ns
Ri:	50	Ohm
Coupling:	I/O + 50 Ohm	
Test duration:	10	m



Test Result		
Test duration:	00:10:01	h
Result:	Test passed !	

3.5 CAPACITIVE COUPLING CLAM TEST SET-UP PHOTO: