



Microtest
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Test Report

Qi ID: 13772

Report No.: MTi220713010-01Q1

Date of issue: August 28, 2022

Applicant: Shenzhen Injoinic Technology Co.,Ltd

Product name: Qi Wireless Charging TX Module
(Subsystem)

Model(s): LZX01025

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>



Test Report

Report No......: MTi220713010-01Q1

Test engineer.....: Carlton Che

Carlton
Reviewer.....: Micro Liang

Micro
Approver.....: Tom Xue

Tom Xue
Date of issue.....: August 28, 2022

Test laboratory.....: **Shenzhen Microtest Co., Ltd.**
Address.....: 101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Applicant.....: **Shenzhen Injoinic Technology Co.,Ltd**
Address.....: Room 3104, block A, building 8, Shenzhen International Innovation Valley (block 8, block C, Wanke Yuncheng phase III)Dashi Road

PPDE test specification.....: **Samsung Proprietary Extension Specification 1.1.0**
Standard(s).....: The Qi Wireless Power Transfer System Power Class 0
 Samsung Proprietary Extension Specification
 Compliance Tests and Test Equipment
 Version 1.1.0 November 2020

Description of DUT (Device Under Test)
Brand.....: LongZiXin

Manufacture.....: SHENZHEN LONGZIXIN ELECTRONICS CO.,LTD

Address.....: B1306, 13th floor, Baolong building, No. 2, Longguan West Road, Dalang street, Longhua District, Shenzhen

Product category.....: Samsung PPDE Transmitter

Coil design.....: A11a

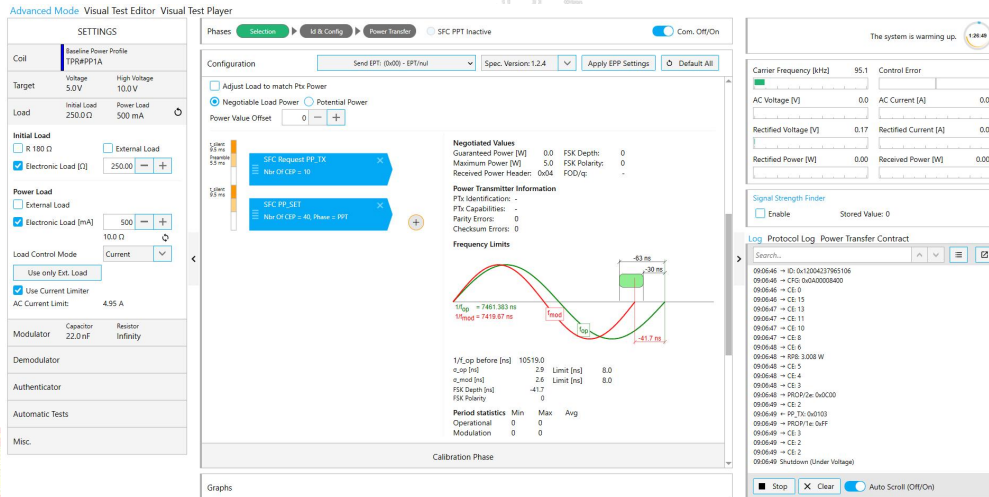
Product name.....: Qi Wireless Charging TX Module (Subsystem)

Model(s).....: LZX01025

Summary of test					
Power source:		Lab Power Supply			
		Rating: 9V/2A			
PRMC Code (PPDE Test)		0*0042			
Date(s) of test:		August 27, 2022			
Test result:		See the test results			
Test Conditions					
Ambient temperature:		22 °C - 25 °C			
Relative humidity:		20 % - 75 %			
Test equipment list					
No.	Equipment	Manufacturer	Model	S/N	Next Cal. date
1	CATS II BST	NOK9	CATS II BST	200147-1836	2022-12-15
2	Oscilloscope	Tektronix	MDO 3054	C016335	2023-06-06
General remarks:					
This test report shall not be partially reproduced without the written consent of the laboratory. The test results of this test report are only responsible for the samples submitted. This test report is invalid without the seal and signature of the laboratory. This test report is invalid if transferred, altered, or tampered with in any form without authorization. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.					

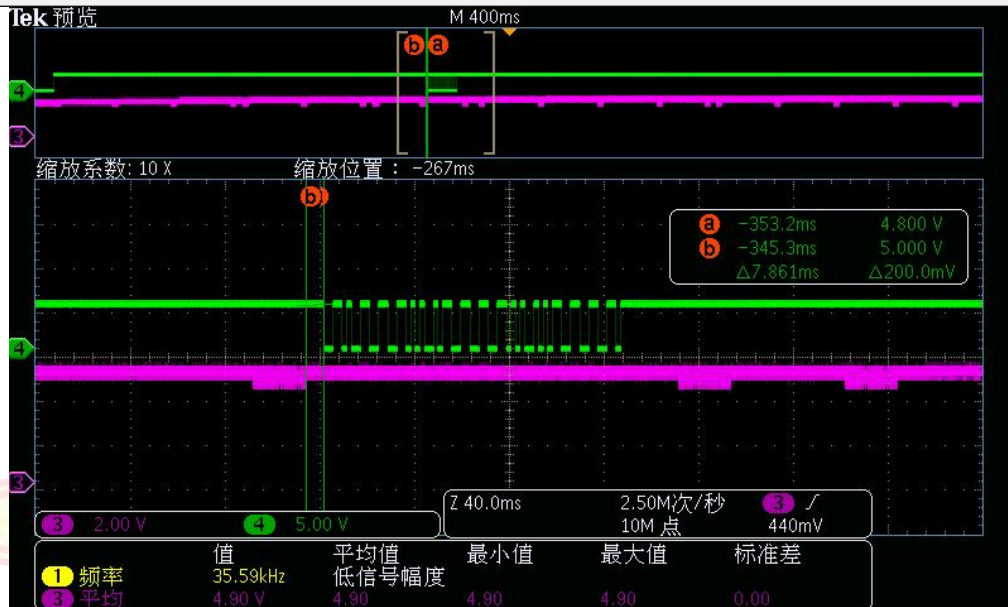
The compliance test results for Samsung Proprietary Extension Transmitter

Test item	Requirement	Result
Samsung Proprietary Extension Safety Tests (Normative)		
Frequency modulation-PP.TX.COM.MOD - Test P.TX.COM.MOD.TC1	The difference of the average lengths satisfies the relation $-63.25 \text{ ns} \leq T1-T2 \leq -30.25 \text{ ns}$	Pass
System Control Requirement - Test PP.TX.PT.PT.TC1	The BSUT responds with an FSK Packet (PP_TX) within $3.0 \leq t_{fsk_delay} \leq 10.0 \text{ ms}$ from the end of the Control Error Packet	Pass
System Control Requirement - Test PP.TX.PT.PC.TC1	Fails if the BSUT responds with Proprietary Packet (PP_TX) before PRx sends PRx Proprietary Packet (Request PP_TX) Passes if the BSUT responds with an FSK Packet consisting of 0x02: 0x01: 0x03 (checksum) Fails if the BSUT responds with BSUT Proprietary Packet (PP_TX or TX_Type) after receiving PRx Proprietary Packet (Request TX Type), except for Samsung wireless charger	Pass
System Control Requirement - Test PP.TX.PT.PCONTROL.TC1	The measured rectified voltage complies with the values specified in Table 3 of the standard	Pass
System Control Requirement - Test PP.TX.PT.PCONTROL.TC2	The measured rectified voltage complies with the values specified in Table 3 of the standard	Pass
Base Station compliance tests for the Samsung Proprietary Extension (Normative)		
Foreign Object Detection - Test PP.TX.PERF.FOD.PP.TC1(a)	The temperature of representative Foreign Object #1 remains below 60°C throughout the test	Pass
Foreign Object Detection - Test PP.TX.PERF.FOD.PP.TC1(b)	The temperature of representative Foreign Object #1 remains below 60°C throughout the test	Pass
Foreign Object Detection - Test PP.TX.PERF.FOD.PP.TC1(c)	The temperature of representative Foreign Object #2 remains below 60°C throughout the test	Pass
Foreign Object Detection - Test PP.TX.PERF.FOD.PP.TC1(d)	The temperature of representative Foreign Object #3 remains below 80°C throughout the test	Pass
Foreign Object Detection - Test PP.TX.PERF.FOD.PP.TC1(e)	Passes, if the BSUT completes the load ramp from 100 mA to 1000 mA without terminating the power transfer. Fails, if the BSUT terminates the power transfer at a load current below 1000 mA.	Pass
Overtoltage Protection Test - Test ptx-pow-ovp-pp-1	The recorded rectified voltage does not exceed 20.0 V at any time, and Does not exceed 16.00 V in between Packets from 500 ms after the load step until the end of the recording	Pass
Thermal Performance - Test PP.TX.POW.TEMP	The top-surface temperature of TPR-THERMAL-PP (as measured by the thermocouple of TPR-THERMAL-PP) is less than 12.0°C above the ambient temperature throughout the measurement	Pass

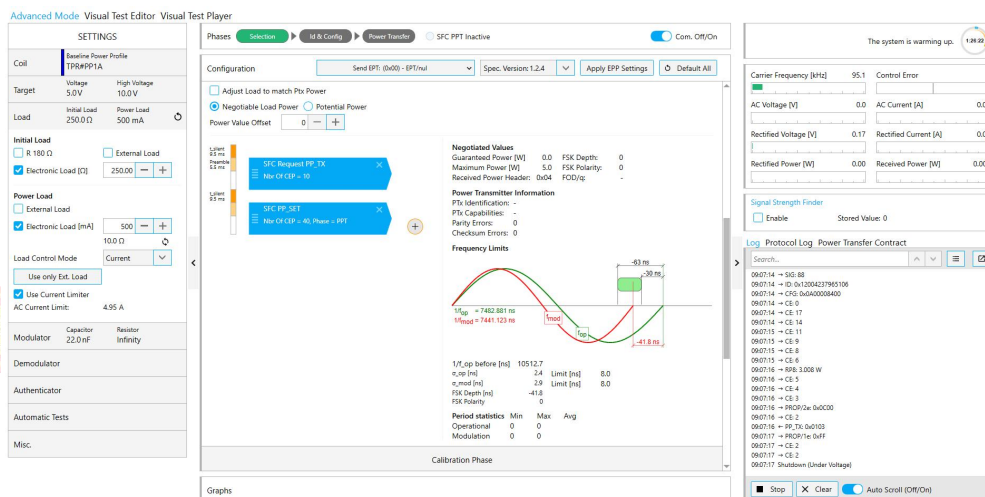
Test Result: Frequency modulation
Frequency modulation – Test PP.TX.COM.MOD.TC1


Test PP.TX.COM.MOD.TC1: The difference of the average lengths T1 - T2 = -41.7 ns.

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Test Result: System Control Requirement
Control Requirement – Test PP.TX.PT.PT.TC1


Test PP.TX.PT.PT.TC1: The time that BSUT responds with an FSK Packet (PP_TX) from the end of the Control Error Packet was 7.86 ms.

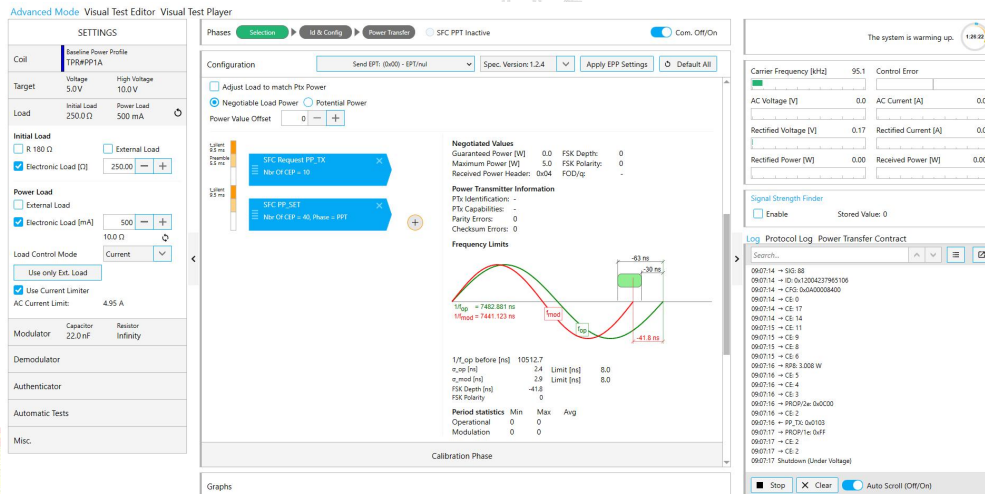
Control Requirement – Test PP.TX.PT.PC.TC1


Test PP.TX.PT.PC.TC1: The BSUT responds with an FSK Packet consisting of 0x02: 0x01: 0x03 (checksum).

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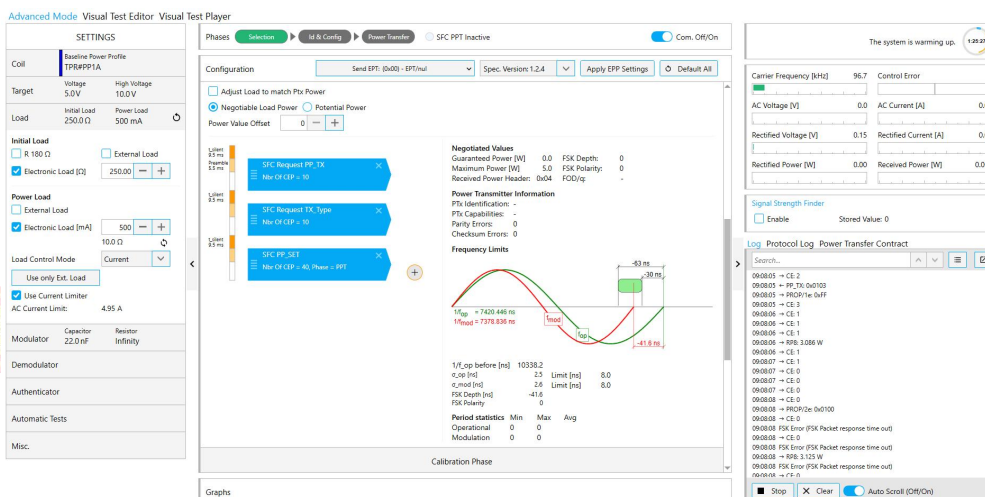
Test Result: System Control Requirement

Control Requirement – Test PP.TX.PT.PC.TC1



Test PP.TX.PT.PC.TC1: The BSUT does not responds with Proprietary Packet (PP_TX) before PRx sends PRx Proprietary Packet (Request PP_TX).

Control Requirement – Test PP.TX.PT.PC.TC1



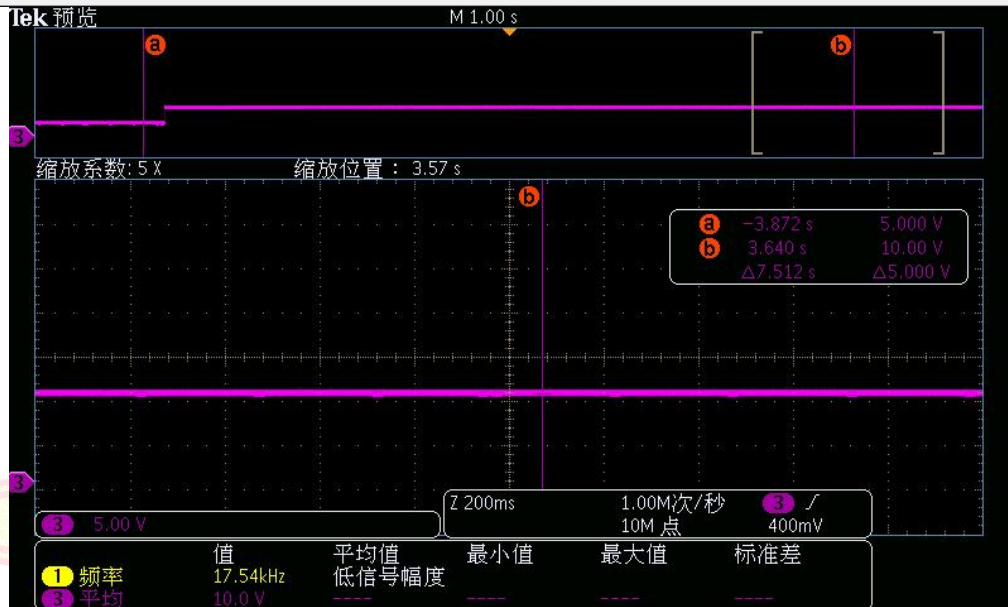
Test PP.TX.PT.PC.TC1: The BSUT does not responds with BSUT Proprietary Packet (PP_TX or TX_Type) after receiving PRx Proprietary Packet (Request TX_Type).

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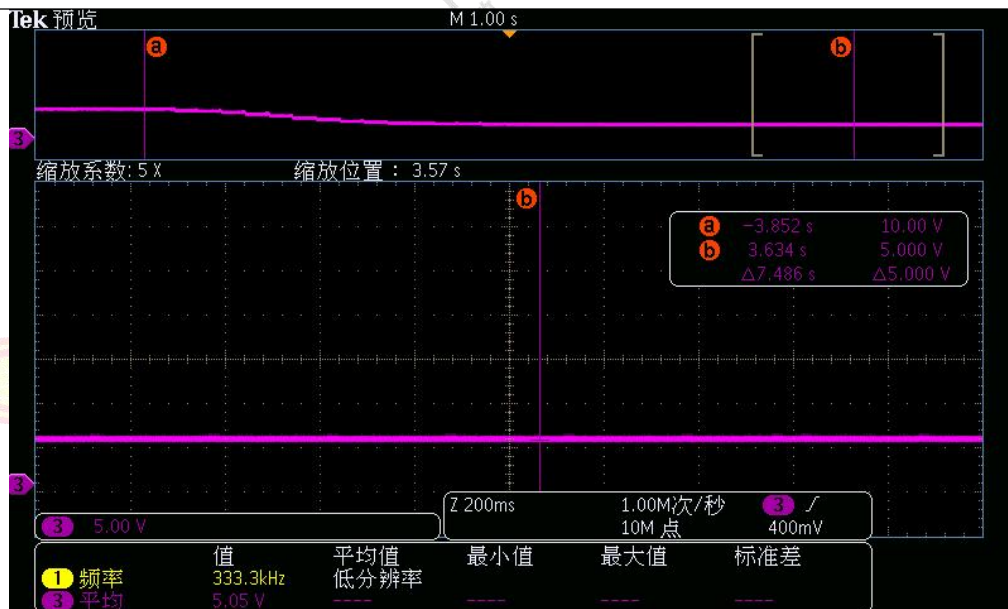
Test Result: System Control Requirement

Control Requirement – Test PP.TX.PT.PCONTROL.TC1



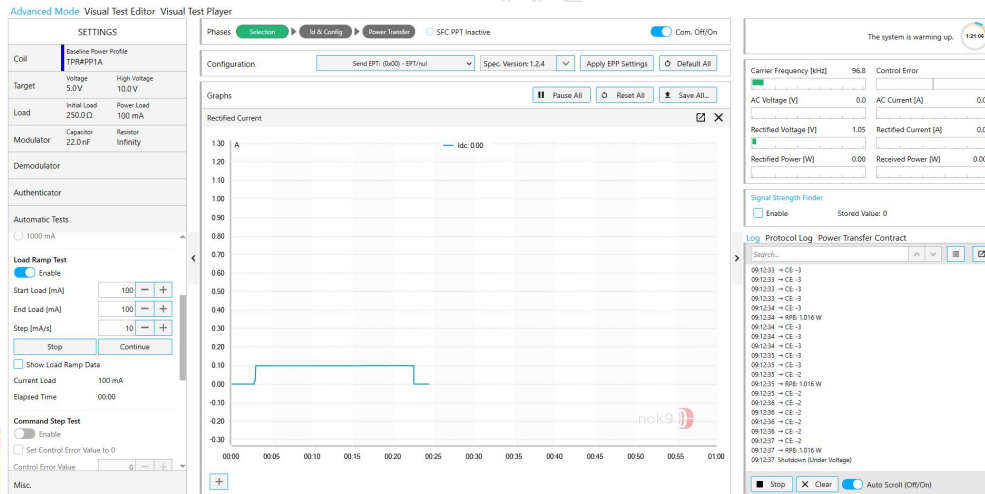
Test PP.TX.PT.PCONTROL.TC1: The measured rectified voltage was 10.00 V.

Control Requirement - Test PP.TX.PT.PCONTROL.TC2

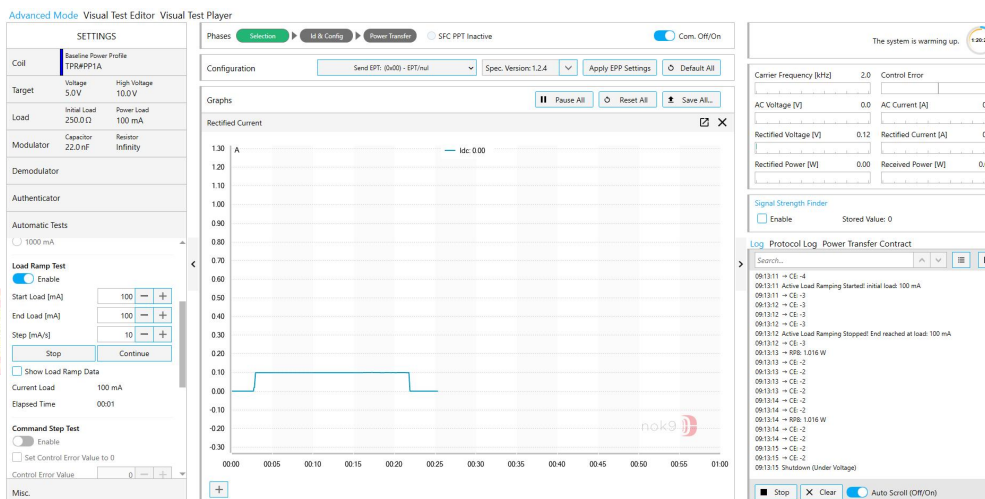


Test PP.TX.PT.PCONTROL.TC2: The measured rectified voltage was 5.05 V.

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Test Result: Foreign Object Detection
Foreign Object Detection – Test PP.TX.PERF.FOD.PP.TC1(a)


Test PP.TX.PERF.FOD.PP.TC1(a) (Foreign Object #1): The BSUT does not initiate power transfer.

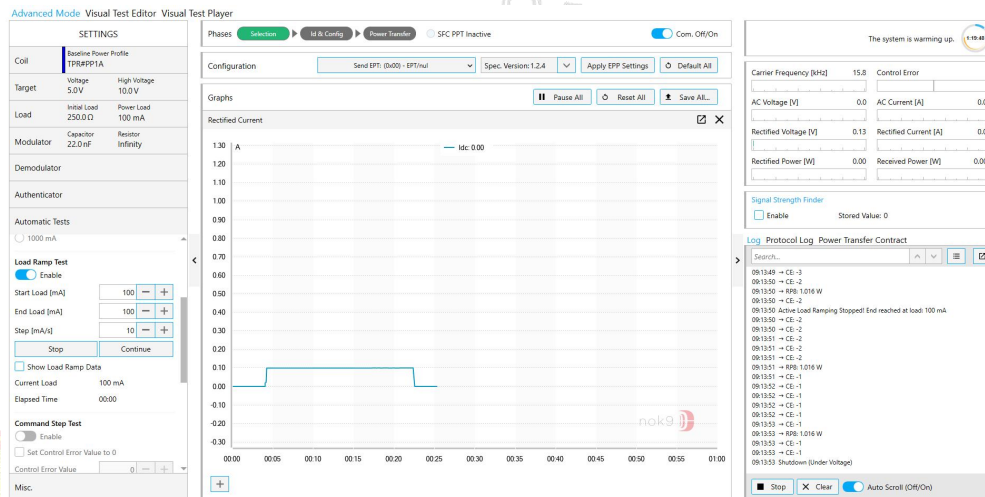
Foreign Object Detection – Test PP.TX.PERF.FOD.PP.TC1(b)


Test PP.TX.PERF.FOD.PP.TC1(b) (Foreign Object #1 in the off center position): The BSUT does not initiate power transfer.

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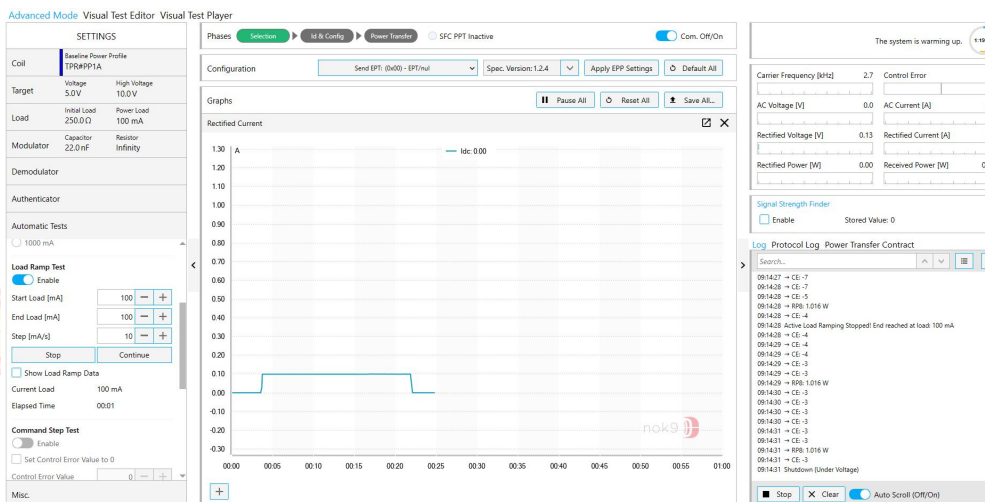
Test Result: Foreign Object Detection

Foreign Object Detection – Test PP.TX.PERF.FOD.PP.TC1(c)



Test PP.TX.PERF.FOD.PP.TC1(c) (Foreign Object #2): The BSUT does not initiate power transfer.

Foreign Object Detection – Test PP.TX.PERF.FOD.PP.TC1(d)

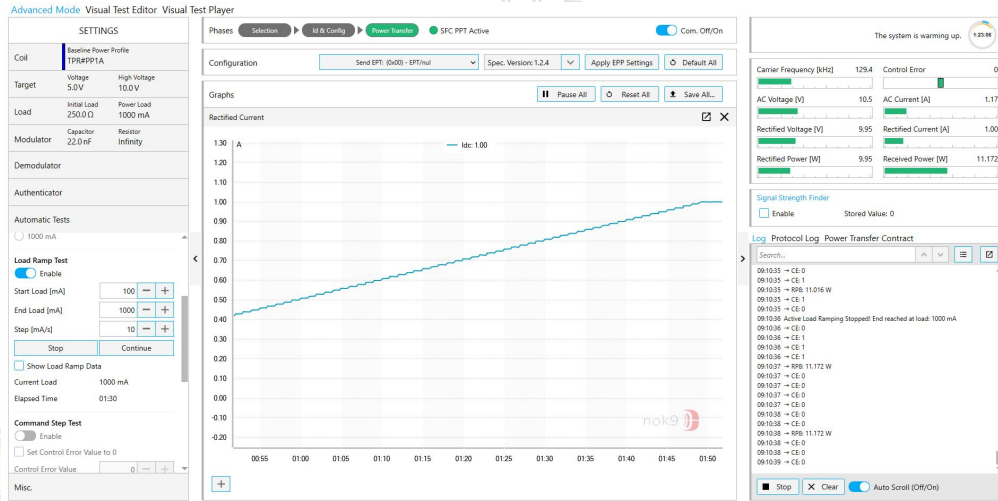


Test PP.TX.PERF.FOD.PP.TC1(d) (Foreign Object #3): The BSUT does not initiate power transfer.

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Test Result: Foreign Object Detection

Foreign Object Detection – Test PP.TX.PERF.FOD.PP.TC1(e)

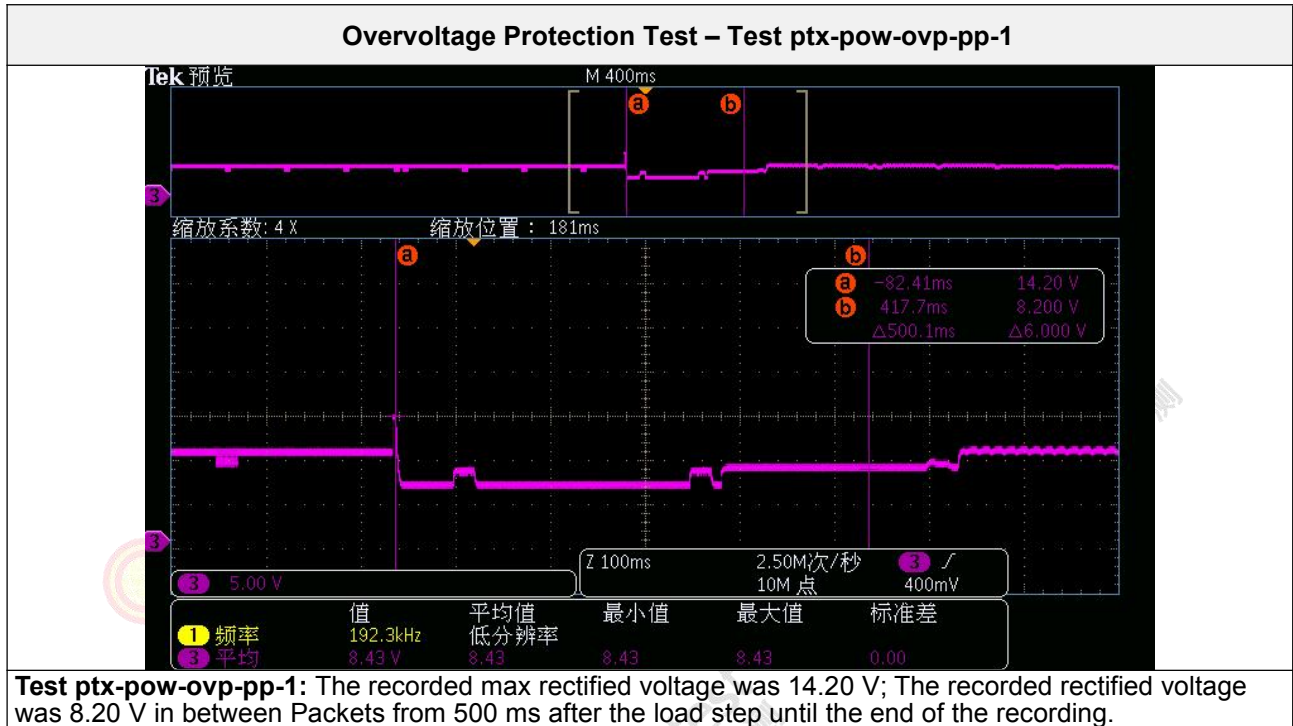


Test PP.TX.PERF.FOD.PP.TC1(e) - No Foreign Object: The BSUT completes the load ramp from 100 mA to 1000 mA without terminating the power transfer.

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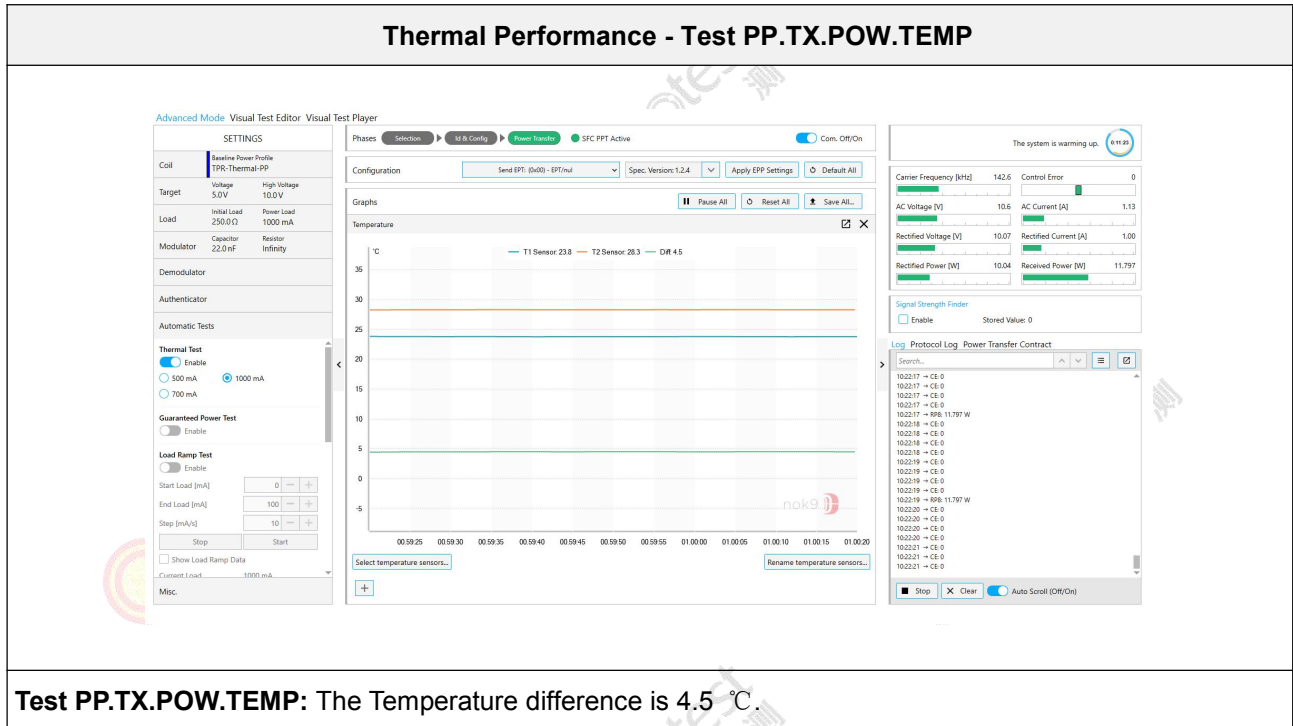
Test Result: Overvoltage Protection Test



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Test Result: Thermal Performance



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