



Texas Instruments RemoTI ZigBee RF4CE Certified Platform Final Report

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PROJECT RESULTS

Overall Result

PASS

INDIVIDUAL RESULTS

The following is a breakdown of the results of the individual tests performed as part of this certification:

Test	Result
ZigBee RF4CE Stack – Spot Test	PASS – The Texas Instruments RF4CE product complies with all the ZigBee RF4CE requirements tested.

PRODUCT UNDER TEST

The following product was tested during this certification:

Product Information	
Date:	6/30/2010 – 7/1/2010
Vendor Name:	Texas Instruments
Vendor Street Address:	9276 Scranton Road
City, State, Postal Code:	San Diego, CA 92121
Country:	USA
Phone Number:	858-638-4297
Email Address:	jreddy@ti.com
Contact, Title:	Joseph Reddy
Product Name:	RemoTI
Product Version:	1.2
Hardware configuration:	CC253x/TIMAC 1.3.0

EQUIPMENT USED DURING TESTING

The following bench equipment and software was used in the testing of the product:

Device	Description / Serial Number(s)
Daintree + FreeScale Sniffers	SNA 3.x, AU02001045, AU02001054, FS MC1322x Dongle
ZigBee RF4CE Golden Units (GU)	Freescale MC1321X Reference Design Boards (x3)
Test Harness	NTS CETest v1.04
Signal Generators	Agilent E4432B (x2)

1. EXECUTIVE SUMMARY

National Technical Systems (NTS) has successfully conducted ZigBee RF4CE Certified Platform **spot** testing on the Texas Instruments RF4CE ("Texas Instrument's product").

The overall objective of the test was to measure the product performance characteristics within the limitations of the given ZigBee RF4CE product adaptation. Texas Instrument's product has successfully PASSED ZigBee RF4CE Certified Platform testing as outlined by the ZigBee Alliance, and summarized herein.

2. TEST METHODOLOGY

The ZigBee RF4CE Certified Platform Certification process has been formulated and governed by the ZigBee Alliance. Certification of a ZigBee RF4CE platform as compliant requires the following:

- Qualification of IEEE-802.15.4 PHY requirements
- Qualification of IEEE-802.15.4 MAC requirements
- Qualification of ZigBee RF4CE Stack requirements

Testing as outlined in this document only covers the ZigBee RF4CE Certified Platform (ZigBee RF4CE Stack) testing according to the 094969r03 document. Texas Instrument's product is based on a platform which has already successfully completed IEEE-802.15.4 PHY and MAC testing. Furthermore, the product tested is a reduced memory version of a previously certified RF4CE platform (thus qualifying for a spot test). For detailed information on the test methodology, please see the ZigBee Alliance website and review the following documents:

ZigBee RF4CE Certified Platform

- 094969r03ZB_RF4CE-CWG-Network_Test_Specification
- 094945r00ZB_RF4CE-Specification
- 095035r04ZB_RF4CE-Specification-Errata-v1.00

Note: The ZigBee Alliance has authorized NTS to perform all of the tests required for ZigBee RF4CE Certified Platform certification. Nevertheless, it is the Alliance that issues the Statement of Certification. The role of NTS is limited to execution of tests and delivery of Statements of Qualification (for IEEE-802.15.4) and Compliance (for ZigBee RF4CE stack) to the ZigBee Alliance and Texas Instruments. Any requests for errata or acceptances of non-compliant products will need to be made to the ZigBee Alliance Qualification Working Group.

3. SUMMARY OF TESTS CONDUCTED & RESULTS

NTS performed the following set of tests to verify the compliance of Texas Instruments RF4CE to the ZigBee RF4CE network test specifications. (as per spot testing procedures, cases exercised represent a subset of the complete list of cases):

TC	ZigBee RF4CE test cases	Mandatory/Optional	Result
2	Node initialization		
2.1	Node initialization - Cold start Target procedure	MANDATORY	PASS
2.2	Node initialization - Cold start Controller procedure	MANDATORY	PASS
2.3	Node initialization - Cold start Target procedure - energy detect	MANDATORY	PASS
3	Service Discovery		
3.1	Service Discovery - All nodes, all device types	MANDATORY	PASS
3.3	Service Discovery - Specific node, any device types	MANDATORY	PASS
3.5	Service Discovery - All nodes, LQI threshold	MANDATORY	PASS
3.7	Service Discovery - Auto Discovery Response - all nodes, specific device type	MANDATORY	PASS
3.8	Service Discovery - Auto Discovery Response - DISCOVERY_ERROR	MANDATORY	PASS

TC	ZigBee RF4CE test cases (Cont.)	Mandatory/Optional	Result
4	Pairing		
4.1	Pairing - Originator	MANDATORY	PASS
4.3	Pairing - Originator No Response	MANDATORY	PASS
4.5	Pairing - Recipient Duplicate Pairing	MANDATORY	PASS
4.6	Pairing - Recipient Controller	MANDATORY	PASS
4.7	Pairing - Recipient No Capacity	MANDATORY	PASS
5	Unpairing		
5.1	Unpairing - Removing a paired link	MANDATORY	PASS
6	Data Transmission		
6.1	Acknowledged unicast transmissions - Single channel	MANDATORY	PASS
6.3	Acknowledged unicast transmissions - Channel merge	MANDATORY	PASS
6.7	Broadcast transmissions - Multiple channel	MANDATORY	PASS
6.9	Acknowledged unicast transmissions - Multiple channel - vendor specific	MANDATORY	PASS
6.11	Broadcast transmissions - Target to Target - Multiple channel	MANDATORY	PASS
7	Security		
7.1	Security - Target link key exchange procedure	MANDATORY	PASS
7.3	Security - Key update	MANDATORY	PASS
7.6	Security - Target to Target - link key exchange procedure	MANDATORY	PASS
8	Power Saving		
8.1	Power saving on target node - data transmission on multiple channels	MANDATORY	PASS
9	Frequency agility		
9.1	Frequency agility on target node	MANDATORY	PASS

4. DETAILED TEST RESULTS

If you would like to see the detailed results for the tests, please contact NTS and we will provide the log files captured during testing.

5. CONCLUSION

At the ZigBee RF4CE level, testing was conducted according to the ZigBee RF4CE Certified Platform network test document. Through interoperability testing with certified ZigBee RF4CE testers, Texas Instrument's product has passed relevant ZigBee RF4CE Compliant test cases and therefore has satisfied the ZigBee RF4CE specification.

Thank you for giving NTS the opportunity to provide Texas Instruments with ZigBee RF4CE testing services. If you have any questions or comments, please feel free to contact us at the phone numbers or e-mail addresses listed below. We appreciate the opportunity, and we look forward to working with you in the future.


Disclaimer:

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Thanks again,

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SIGNATURE

7/8/2010

DATE