XR829 CE Certification User Guide

Revision 1.0

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Revision History

Version	Data	Summary of Changes
1.0	2019-8-7	Initial Version

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1 Overview

The XR829 chip is a chip that integrates 2.4GHz WIFI & Bluetooth.This chip support WLAN 802.11 b/g/n and SDIO 2.0 interfaces.It also supports BT V4.2 dual mode (BT/BLE) mode of operation, HCI (up to 4M baud rate UART) and PCM interface.This document will briefly introduce the precautions of the XR829 chip in CE(EN300328) certification.

2 WLAN Certification

2.1 Transmitter unwanted emissions spurious domain

Please refer to the documents "XR829_Application_Guide_V1.1-CN" and "XR829_PCB_Layout_Guide_V1.2-CN" for details.

The RF output port (ANT pin) of the XR829 chip needs to reserve a PI type matching circuit to filter out harmonic spurs for RF authentication (as Figure 1-1 shown). If the filter circuit is not adjusted, the spurious authentication item cannot be passed. Note that the WR1 and PI type matching circuits need to be close to the chip side. This PI type circuit only filters out harmonic spurs for RF authentication.

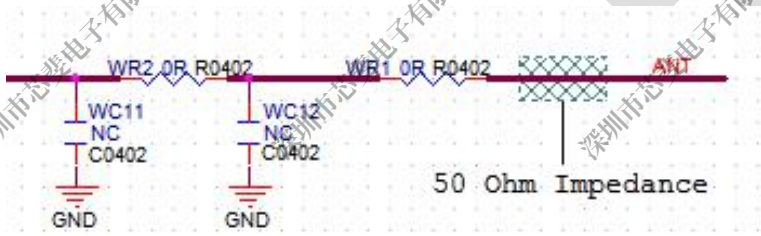

Figure 1-1 Schematic diagram of PI type matching circuit

2.2 Adaptivity

The current software turns off the adaptive feature by default, to enable this function, you need to turn on WiFi and execute the following commands through adb or serial port:

Open Adaptivity：echo 1 > /sys/kernel/debug/ieee80211/phy*/xradio/ce_test
Close Adapivity：echo 0 > /sys/kernel/debug/ieee80211/phy*/xradio/ce_test

If you restart wifi, this feature will be turned off by default.You need to re-enter the command to open this function.

3 BT Certification

3.1 BT Test Mode

When the device under test needs to connect to the Wireless Connectivity Tester(e.g CMW500) to test the signaling mode, you need to enable BT test mode first. You can execute the relevant command to enable BT test mode by adb or serial port. Refer to the documents “XR829 Bluetooth Xrbt_TestMode Tool User Guide_V1.0-EN” for details.

For example, enter the following commands by adb or serial port：

If BlueTooth is not turned on, enter：rxbt_testmode -e If BlueTooth is turned on, enter：rxbt_testmode

4 FAQ

4.1 Low power of Transmitter test

If there is no special requirement for the power of WiFi and BT, the default power in the firmware we provide is about 11n 14±2dbm, 11g 15±2dbm, 11b 16±2dbm, BT 7±2dbm can refer to the power value：

Possible reasons	Solutions
RF line impedance is not 50Ω	The test point should be as close as possible to the chip end to eliminate the effects of RF line impedance deviation
Antenna is not disconnected	Ensure that the antenna is completely disconnected during the conduction test
Bad welding of conductor wire	Check if the weld is shorted to ground

Table 4-1 Possible reasons for low power of Transmitter test

4.2 Possible peoblems for WiFi Adaptivity test

In the adaptive conduction test, the router of the individual certification authority may have Beacon frame leak, which causes authentication test failure. In this case, there may be the following solutions：

Possible reasons	Solutions
The transmit Beacon frame power of the router is too high.	Add an attenuator to the radiating end of the router to reduce the transmit power of the Beacon frame
	The adaptive test item is tested by antenna coupling, which conforms to the authentication rules.

Table 4-2 Possible problems for WiFi Adaptivity test

4.3 BT device cannot be connected to the Wireless Connectivity Tester

Possible reasons	Solutions
BT test mode is not enabled	BT in normal mode cannot establish a connection with the tester. Please make sure the BT test mode is on before connecting the tester.

Table 4-3 Possible reasons for BT test mode

4.4 ETF Command line tool or APK tools cannot work

Possible reasons	Solutions
WiFi is not turned off	Before running these tools, please make sure WiFi is turned off.
WiFi location scanning is not turned off	For Android system, make ensure that Wi-Fi scanning is turned off. By checking "Settings-> Security & location-> Location -> Scanning".

Table 4-4 Possible reasons for ETF Command line tool or APK tools