

Wistron 3D
RF Tx Module: TXE01
RF Tx Dongle: TXD01

Rev 0.01

Copyright

Wistron 3D Radio Frequency Tx module and Tx Dongle operational description and design guide.
26 Oct 2011.

Copyright © 2011 Wistron Corporation. All Rights Reserved.

Disclaimer

The programs are provided "as is" without warranty of any kind either expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. This publication could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of this publication. Wistron Corporation is without obligation to notify any person of such revisions or changes.

Table of Contents

- 1 Overview.....4**
 - 1.1 Environmental Protection.....4
 - 1.1.1 Restricted Substances and Environmental Requirements.....4
 - 1.1.2 RoHS.....4
 - 1.2 Product Specification.....5
 - 1.2.1 3D RF Tx Module.....5
 - 1.2.2 3D RF Tx Dongle.....5
 - 1.3 Physical Description and Specification.....5
 - 1.3.1 Hardware Specification.....5
 - 1.3.2 Hardware Block Diagram.....6
 - 1.3.3 Subsystem.....7
 - 1.4 Operational Concept.....9
 - 1.5 Packing.....9
- 2 Reliability.....11**
 - 2.1 Purpose.....11
 - 2.2 Scope.....11
 - 2.3 Testing Condition.....11
- 3 Certification.....12**

1 Overview

As 3D display device getting more and more popular, the 3D active shutter demand is speedy increased. Different from the traditional 3D shutter glasses using IR technology, Wistron 3D Tx module and Tx dongle are using RF technology. RF technology will not be limited by the direction and can support multi-3D RF Rx module at the same time.

1.1 Environmental Protection

1.1.1 Restricted Substances and Environmental Requirements

All the materials and manufacturing process used to produce 3D RF Tx module and RF Tx dongle must comply with RoHS requirements.

1.1.2 RoHS

All materials contained in the 3D RF Tx module and 3D RF Tx dongle complies with RoHS.

1.2 Product Specification

1.2.1 3D RF Tx Module:

- Dimension: (L)23 x (W)9.1 x (H)3.55 mm +/-0.1mm
- 2.4GHz
- Trigger frequency: support 50~60hz, switchable
- Power: 1 set power for 3.3V (3.3V/150mA)
 - RF trigger signal power: 3.3V
- RF performance: 10m
- 1 3D RF Tx module can support up to 10 3D RF Rx module at one time

Wire connector:

- 1 pcs for 4 pin
 - Power
 - INT
 - Paring
 - GND

1.2.2 3D RF Tx Dongle:

- Dimension: (L)28.2 x (W)15.14 x (H)6.44 mm +/-0.1mm
- 2.4GHz
- Trigger frequency: support 50~60hz, switchable
- Power: 1 set power for 5V (5V/100mA)
 - RF trigger signal power: 3.3V
- RF performance: 10m
- 1 Tx USB dongle can support up to 10 Rx module at one time

Connector:

- 2 pcs
- 1 for 4 pin USB 2.0 type-A
- Another 1 for paring button

1.3 Physical Description and Specification

1.3.1 Hardware Specification

3D RF Tx Module Specification

Connector:

- 4 pin connector: System power source and 3D trigger signal.

Electronics module:

- Microprocessor.
- Trigger signal.
- 2.4G RF circuitry

Power:

- 3.3V power source.

3D RF Tx Dongle Specification

Connector:

- USB 2.0 type A connector: System power source and 3D trigger signal.

Electronics module:

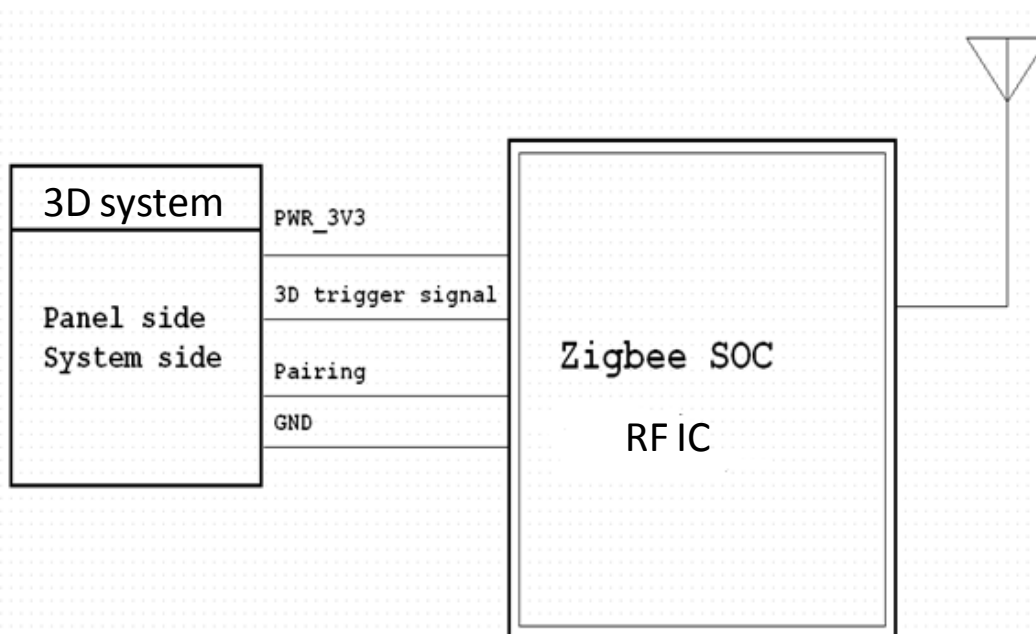
- Microprocessor.
- Trigger signal.
- 2.4G RF circuitry

Power:

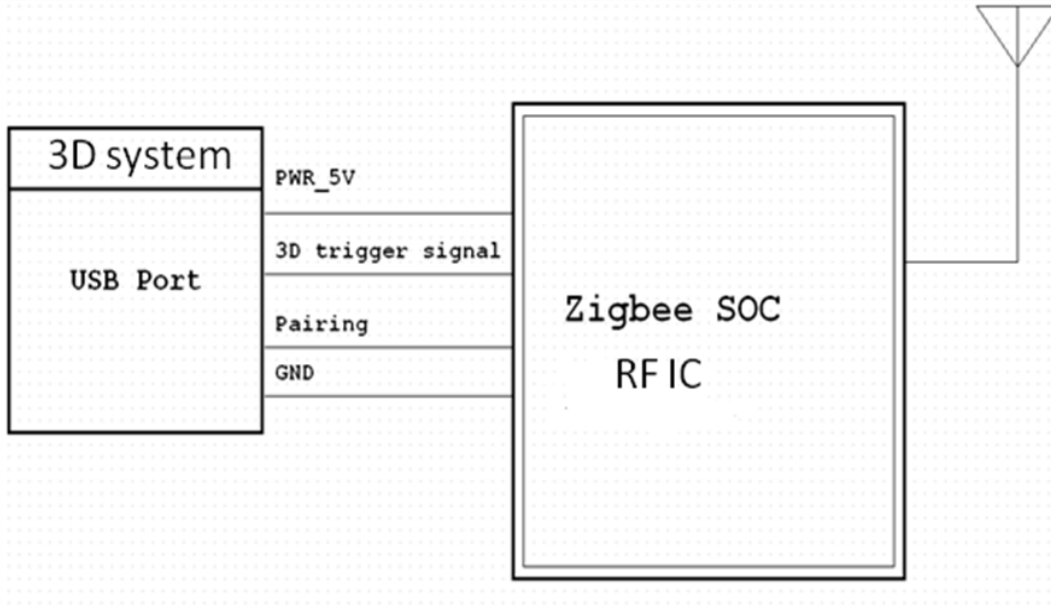
- 5V power source

1.3.2 Hardware Block Diagram

3D RF Tx Module Block Diagram



3D RF Tx Dongle Block Diagram



1.3.3 Subsystem

3D RF Tx Module

Connector:

- 4 pin connector: System power source and 3D trigger signal.

Pin1	3.3V
Pin2	3D trigger signal
Pin3	paring
Pin4	GND

Electronics module:

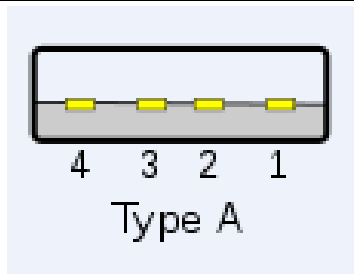
- Microprocessor.
 - There shall be GPIO that is used to trigger 3D signal.
 - Immediately via 2.4G RF wireless output the 3D signal to radio.
 - Firmware and paring ID upgrades support.
- Trigger signal.
 - Voltage : 3.3V +- 5%
 - Pulse
- 2.4G RF circuitry
 - Connectivity supporting: frequency hopping with 3 channels.
 - RF performance: 10 meters
 - 1 3D RF Tx module can support up to 10 3D RF Rx module at one time

3D RF Tx Dongle

Connector:

- USB 2.0 type A connector: System power source and 3D trigger signal.

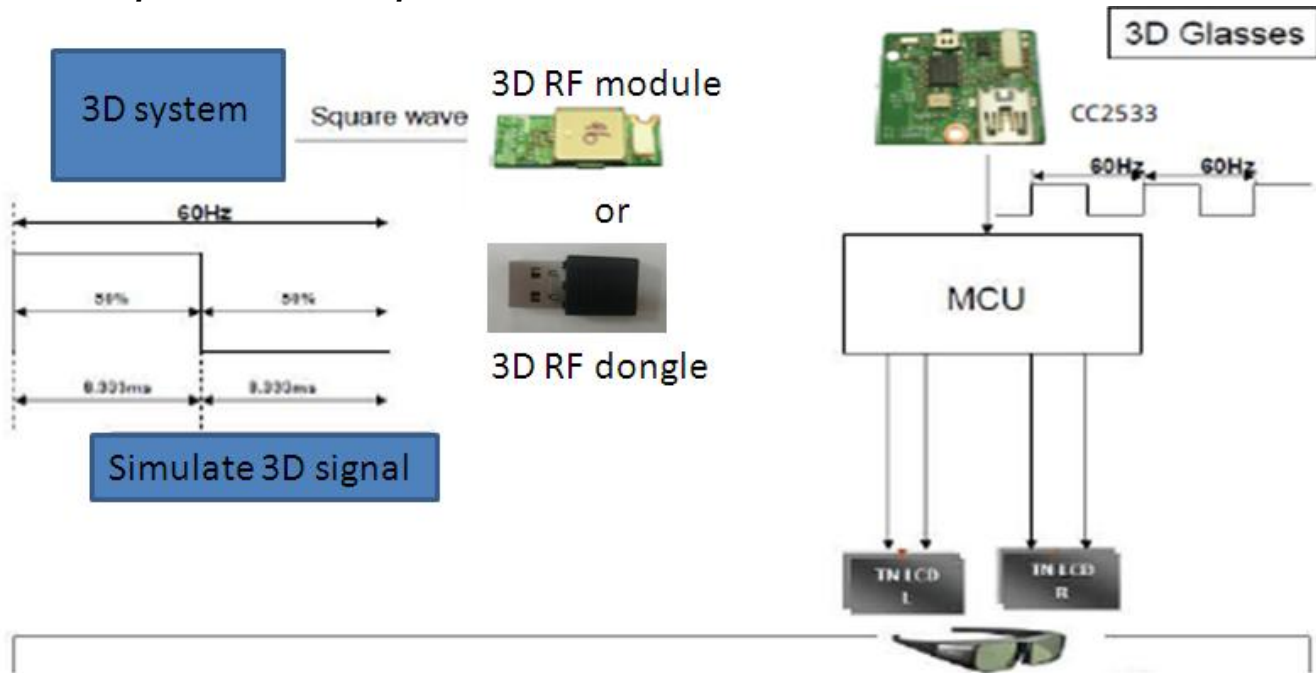
Pin1	5V
Pin2	3D Trigger Signal
Pin3	Paring
Pin4	GND



Electronics module:

- Microprocessor.
 - There shall be GPIO that is used to trigger 3D signal.
 - Immediately via 2.4G RF wireless output the 3D signal to radio.
 - Firmware and paring ID upgrades support.
- Trigger signal.
 - Voltage : 3.3V +- 5%
 - Pulse
- 2.4G RF circuitry
 - Connectivity supporting: frequency hopping with 3 channel
 - RF performance: 10 meters
 - 1 3D RF Tx dongle can support up to 10 3D RF Rx module at one time

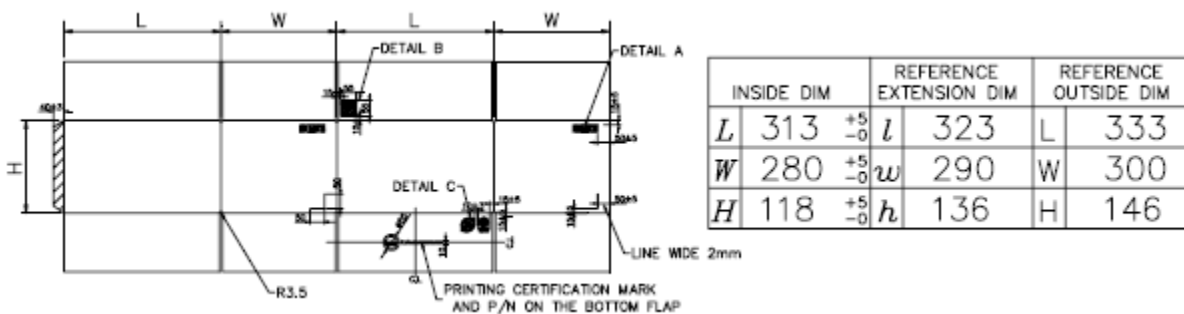
• 1.4 Operational Concept

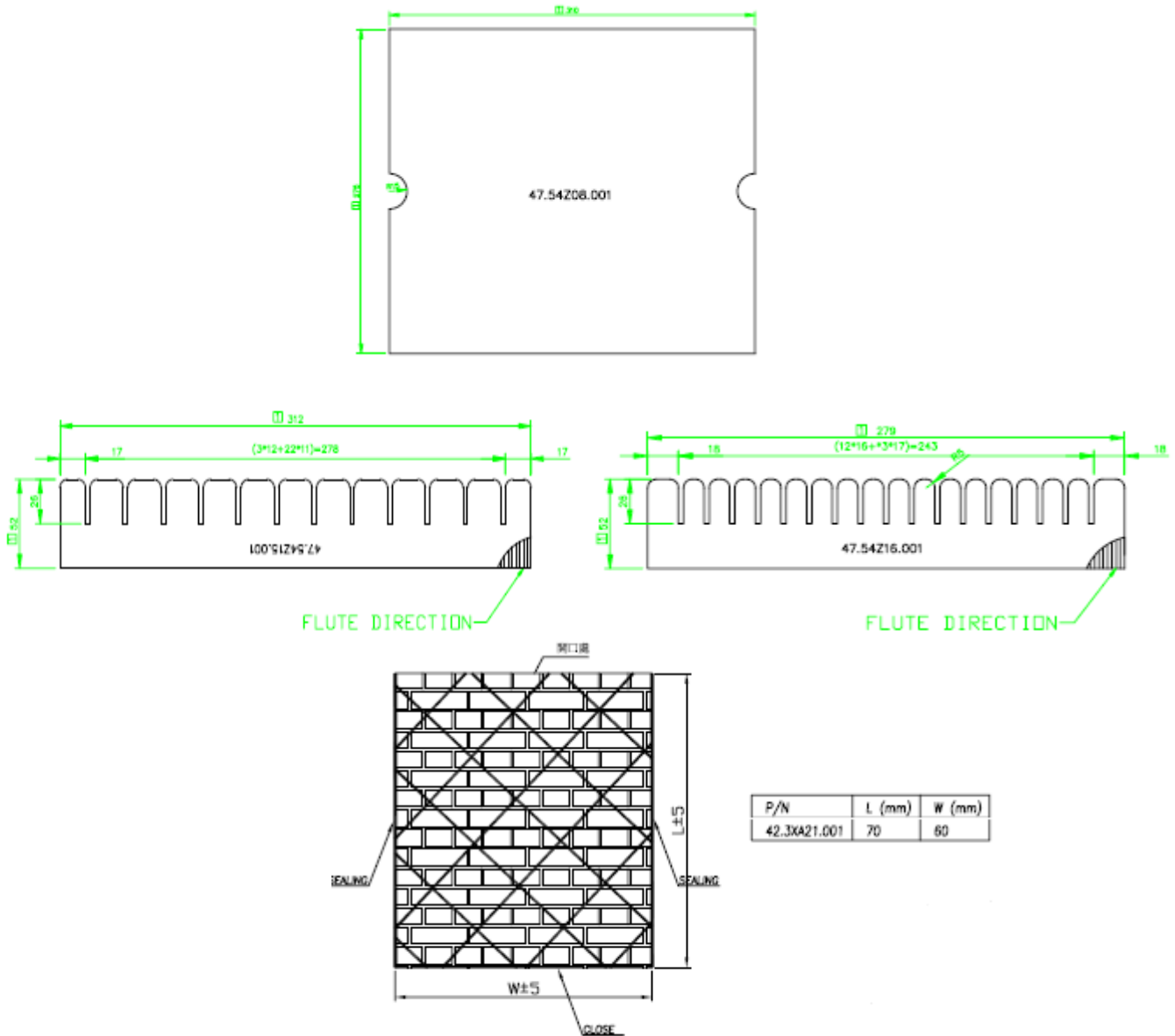


1.5 Packing

3D RF Tx Module and 3D RF Tx Dongle Packing Material

Description	Q'ty	Remark
CTN AB B/R 323*290*136MM	0.0028	350 pcs in 1 carton
PAD B 310*275MM	0.0085	
PARTITION B 312*52MM	0.0966	
PARTITION B 279*52MM	0.6818	
BAG CONDUCTIVE GRID 70*60MM	1	





● **Packing photo**



2 Reliability

2.1 Purpose

To insure the quality of Wistron 3D radio frequency product which developed, designed and

produced meet requirements of customers.

2.2 Scope

This document defines an applicable set of tasks necessary for an effective 3D RF Tx module and 3D RF Tx dongle verification qualification program.

2.3 Testing Condition

Test item	Condition
1 Operation Temp/Hum Cycle Test	Temp: 0~40C, Humidity: 90%, Test duration : 24hrs
2 Cold and hot start Test	Cold start: Temp:0C, 5 times Warm start: Temp:40C, 5 times
3 Climatic tests on non-packed product (testing under non-operation)	-Cyclic humidity test -Damp heat steady state test -Dry heat test -Cold test
4 Package Vibration Test	X,Y axis Test Time: 30 minutes Random Vibration:Grms =1.04
5 Package Drop Test	1000mm for 1 worse case of concer 3 edges cartons damage.
6 EMI Test	Follow up CE standard
7 ESD Test	Air Con Require ±8kV ±4kV Normal performance within the specification limits (B)
8 RF Performance Test	RF performance-conductive & air test
9 Antenna Performance Test	in band (2400~2483.5MHz) - antenna efficiency - Antenna Return loss
10 EE Basic Function Test	Test coverage: - Quick Scan - System All Clock Check - RF function - DC Distribution At Device Power Line - System Power consumption - Room temperature System Long Run
11 Angles of receive signal	Different angles from Tx or Tx dongle by 360 degrees
12 Button Test (Tx dongle)	Pairing mode by manual - 100 times
13 USB	- TX USB dongle - detect and remove on NB 20 times
14 RF performance	- Paired glasses and device distance 10M - 1 Tx to 10 Rx and distance 10M
15 FW & ID reflash	- Follow reflash SOP
16 Button and Switch Life Test (only for Tx USB dongle paring button)	Power switch Button:20000times
17 Tx Dongle Connector Life Test	Plug in and out system for 2000 times

3 Certification

Country	logo	Standard
USA	FCC	FCC pasrt 15C
		FCC ID fee
		short term confidentiality
EU	CE	EN 300 440
		EN 301 489-1-3
		EN 62311 (MPE)
		notification 31 countries
TW	NCC	LP0002
		ID fee
China	SRRC	RF
Japan	Telec	Telec

Deral Communication Commission interference state-ment :

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference and
- (2) this device must accept any interference received, including interference that may cause undesired operation

RF exposure warning: The equipment complies with RF exposure limits set forth for an uncontrolled environment. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.