Video receiver module 670TS0029

User/Installer Manual

Version 1.1

www.transvideo.eu

Important Notice

Transvideo reserves the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to Transvideo's terms and conditions of sale supplied at the time of order acknowledgment.

Transvideo warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with Transvideo's standard warranty. Testing and other quality control techniques are used to the extent Transvideo deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

Transvideo assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using Transvideo components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

Transvideo does not warrant or represent that any license, either express or implied, is granted under any Transvideo patent right, copyright, mask work right, or other Transvideo intellectual property right relating to any combination, machine, or process in which Transvideo products or services are used. Information published by Transvideo regarding third-party products or services does not constitute a license from Transvideo to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from Transvideo under the patents or other intellectual property of Transvideo.

Reproduction of information in Transvideo data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. Transvideo is not responsible or liable for such altered documentation.

Resale of Transvideo products or services with statements different from or beyond the parameters stated by Transvideo for that product or service voids all express and any implied warranties for the associated Transvideo product or service and is an unfair and deceptive business practice. Transvideo is not responsible or liable for any such statements.

All company and brand products and service names are trademarks or registered trademarks of their respective holders.

Revision history

1.0 : creation
1.1 : edited for FCC certification only

Table of Contents

Important Notice 2

Revision History 3

Table of Contents 4

Safety Instructions 5

Introduction 6

1.1 Front view 7

1.2 Back view 7

LED behaviors 8

Interface Connector (J32) 9

FCC Caution 12

Safety Instructions

- When operating this equipment, read and follow all the instructions in this manual.
- Do not open unit.
- Do not block the air ventilation openings.
- Use only accessories specified or recommended by Transvideo.
- When devices are switched on keep away at least 20 cm from your body.
- Do not expose to moisture or excessive heat.
- Keep away from water
- Use the mains plug to disconnect the apparatus.
- Clean with a dry cloth only.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.
- Keep these instructions in a safe and accessible place for future use.

Explanation of graphical symbols:

High Voltage Sign: warns the user of the presence of uninsulated "dangerous voltage" within the product enclosure, which may be of sufficient magnitude to constitute a risk.

General Warning Sign: warns the user of the presence of important operating and maintenance (servicing) instructions in the product manual.

Introduction

The **670TS0029** is a wireless A/V receiver board, which works at the 5GHz unlicensed band. The perfect HDMI video, audio quality, the high robustness and the invisible latency of the wireless system are unmatched by any other wireless technology and presents a true alternative to cable. The WHDI system transmits **uncompressed** video and audio streams wirelessly and thus simplifies and eliminates system issues, such as: lip-sync, large buffers and other burdens like retransmissions or error propagation.

System Technical Specifications:

Video Interface:	Y-Cb-Cr
Audio:	Over I2S interface
Frequency Control:	**Non-DFS Frequencies** : 5.170~ 5.250 GHz for EU 5.170 ~ 5.250 GHz and 5.735~5.825 GHz for US **DFS Frequencies** (used only in Aerial mode): 5.250-5.330 GHz and 5.490 ~ 5.710 GHz for EU 5.250-5.330 GHz and 5.490 ~ 5.590 GHz and 5.650 ~ 5.710 GHz for US **SRD Frequencies (EU):** 5.725 ~ 5.875 GHz for EU
Antenna:	4 receiving + 1 transmitting/receiving External using on-board RP SMA Connectors
Environment:	Operational - 0:40° C, 10%~90% humidity Storage - 0:55° C, 10%~90% humidity
Voltage:	5V ±10%
Size:	L: 75mm x W: 80mm x H: 15mm
User Control:	3 LEDs indicating Power, Video lock and Network lock Connector for software update; button for registration; Reset button
FCC ID	ZPT904TS0147

Table 1: *Technical Specifications*

1 PRODUCT DESCRIPTION

Front view

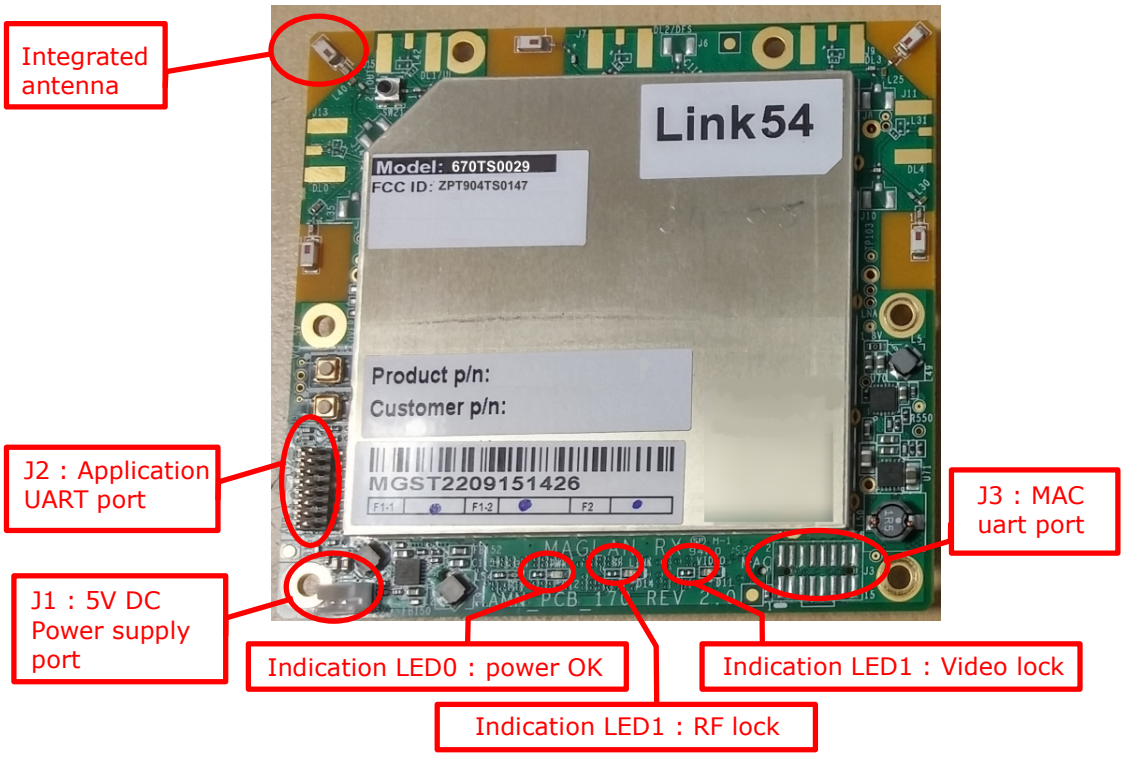

Figure 1 –Rx 670TS0029 top-side

Back view

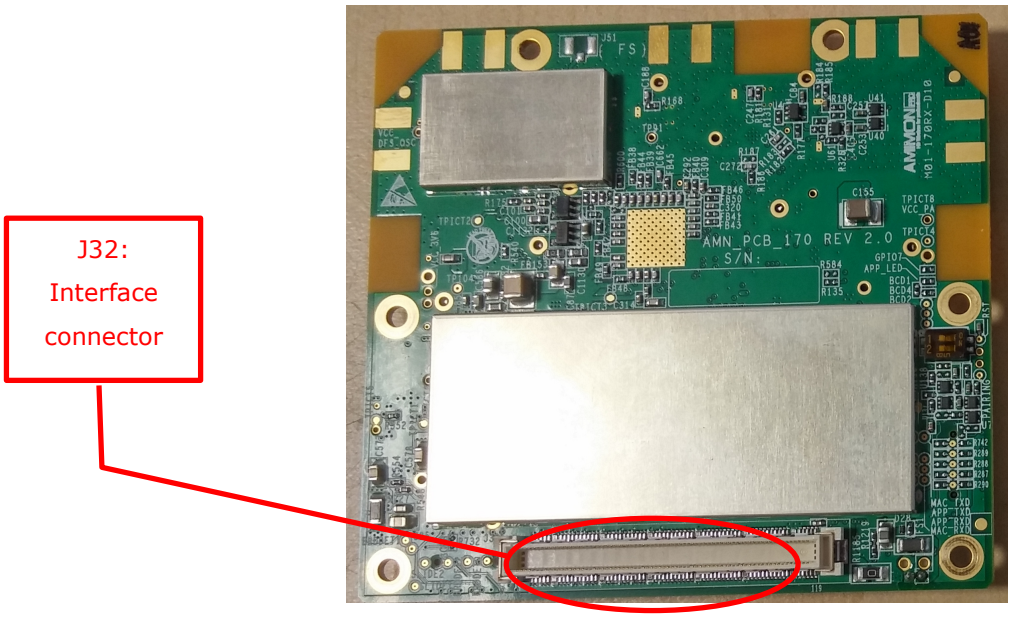

Figure 2 – Rx 670TS0029 bottom side

LED behaviors

Network LED

BLINKING MODE	DESCRIPTION
Solid	When a connection to Tx is established*/Link quality is good
Slow	Device is in listen mode/Link quality is reasonably good
Normal	During link setup mode/during registration
Fast	System Error (Video LED flashing as well)/Link quality is poor

*In Aerial mode even when Tx is out of range.

Video LED

BLINKING MODE	DESCRIPTION
Solid	Video signal is locked
Fast	System Error (Video LED flashing as well)

Power LED

BLINKING MODE	DESCRIPTION
Solid	Power is supplied

Interface Connector (J32)

The Interface connector J32 provides various interfaces to communicate with the 670TS0029 MCU to configure video related parameters and settings, or receive the network status and communication related parameters.

The following interface options are available:

- External Power Supply voltage (5VDC ±10%)
- Signal Ground
- Video YCbCr signal output
- I2S audion output interface
- I2C bus
- Indication output (Power, Network, Video Indications)
- Board attached ID pins
- UART
- USB
- SPI

Contact Transvideo to request the complete pin allocation and functional description of the interface board.

The communication through the interface board is provided by Transideo's API commands. A guide for the API commands is available upon request.

2 PRODUCT INSTALLATION

The 670TS0029 is referred as the main platform that comprises a wireless Video Display Unit (VDU). It provides RGB video signal bus and I2S audio interface at its interface connector output. The source of the video and audio is a compatible remote wireless Video Source Device (VSU). At common application, the VSU is connected to a video source, and transmits the video over wireless to the VDU, which is connected to the video monitor.
The 670TS0029 is designed to be integrated with any compatible Video Interface Board (VIB), to provide a complete wireless Video Display Unit.
At common application, the VIB shall provide standard video interface that can be connected to standard video monitor. This video interface may be HDMI, HD-SDI or any other standard or custom video interface.

It is advised to verify compatibility of the VIB to the interface connector type, pin functionality, and signal compatibility of the 670TS0029 module, before initiating the installation.
At installation, make sure that the 670TS0029 is firmly attached and secured to the VIB by proper mechanical means.

Installation of 670TS0029 must provide the adequate heat dissipation means, to provide the module ambient temperature within the product operating conditions as specified.

3 SYSTEM SETUP

See ‘Product Description’ for port location described in this section.

1. Connect Transvideo-670TS0029 receiver to compatible Video Interface Board (VIB).
2. Connect the VIB to a video monitor through the supported video interface of the VIB.
3. Power ON the VIB according to its operating manual.
4. Set the Antenna orientation of the 670TS0029:
   It is recommended to separate the antennas to match the picture. Receiving antennas should be oriented in the same plane as the transmitting antenna.

Note: For maximal range

- Keep line of sight between the transmitter and the receiver.
- Avoid placing any obstacles besides the transmitter or the receiver.
- Position both transmitter and receiver in an upwards position, for enhanced antennas performance.
- Mount the Transvideo - 670TS0029 module with proper air ventilation.
- Bring the transmitter and receiver closer together while trying to maintain at least 1 meter between them.

FCC Caution

Any changes or modifications not expressly approved by the responsible party could void the user's authority to operate this equipment.

Notice:
This module in its final integration requires the end-product to continue to comply with DFS requirements. A class II permissive change may be required for operation not already described in the FCC Grant filing.

OEM Labelling Requirements
Notice: The OEM of final integrator must ensure that FCC labelling requirements are met.
For a host using this module, if (1) the module's FCC ID is not visible when installed in the host, or (2) if the host is marketed so that end users do not have straightforward commonly used methods for access to remove the module so that the FCC ID of the module is visible; then an additional permanent label referring to the enclosed module should be used, with the following contents:

Contains FCC ID: ZPT904TS0147

The host OEM user manual must also contain clear instructions on how end users can find and/or access the module and the FCC ID. The applicable usage is to be used as a wireless device, connected to the back of a professional camera and transmitting live video, coming from BNC connectors

NOTE:
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 in-stalled 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.

FCC Radiation Exposure Statement
This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
This equipment 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.

THE ANTENNA USED FOR TRANSMISSION MUST BE INSTALLED TO PROVIDE A SEPARATION DISTANCE OF AT LEAST 20 CM FROM ALL PERSONS AND MUST NOT BE COLOCATED OR OPERATING IN CONJUNCTION WITH ANY OTHER ANTENNA OR TRANSMITTER