

ACTiSYS

The Wireless Connectivity Expert



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IrSimple™

ACT-IR9201

Optical Power To Voltage Converter

User's Manual



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REVISION HISTORY

Revision History		
Revision	Date	Comment
0.1a	09/28/2000	Initial release
1.0	10/02/2006	<ul style="list-style-type: none">Revised PCB and housingRevised the manual format
1.1	01/02/2007	<ul style="list-style-type: none">Revised Chapter of Specification
1.1.1	03/04/2009	<ul style="list-style-type: none">Changed box design on power switch & photodiode
1.1.1.1	05/17/2011	<ul style="list-style-type: none">Updated IrSimple/IrSimpleShot logo

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1 INTRODUCTION

ACT-IR9201 is an advanced Optical Power To Voltage Converter (OVC). It is designed to receive the serial port or FIR controller based FIR/SIR peripheral through the Oscilloscope. It is used to capture the IrDA[®] transmitter intensity and the high bandwidth of OVC.

2 PACKAGING CHECK LIST

The package includes:

1. ACT-IR9201 OVC BOX * 1
2. BNC Cable * 1
3. Double BNC male connector * 1
4. UDT PIN 10D Photodiode * 1
5. Battery 12V (GF-5, 23AE, VA23GA, MS21/MN21) * 2
6. CD – user's manual * 1

3 ACT-IR9201 INSTALLATION

Please follow below installation instruction to install ACT-IR9201.

1. This is ACT-IR9201 OVC BOX. (Optical Power To Voltage Converter)



2. Connect the Double BNC male connector to OVC Box as shown on the picture and put the battery into the box.

3. Connect photodiode (UDT PIN 10D) to double BNC male connector.

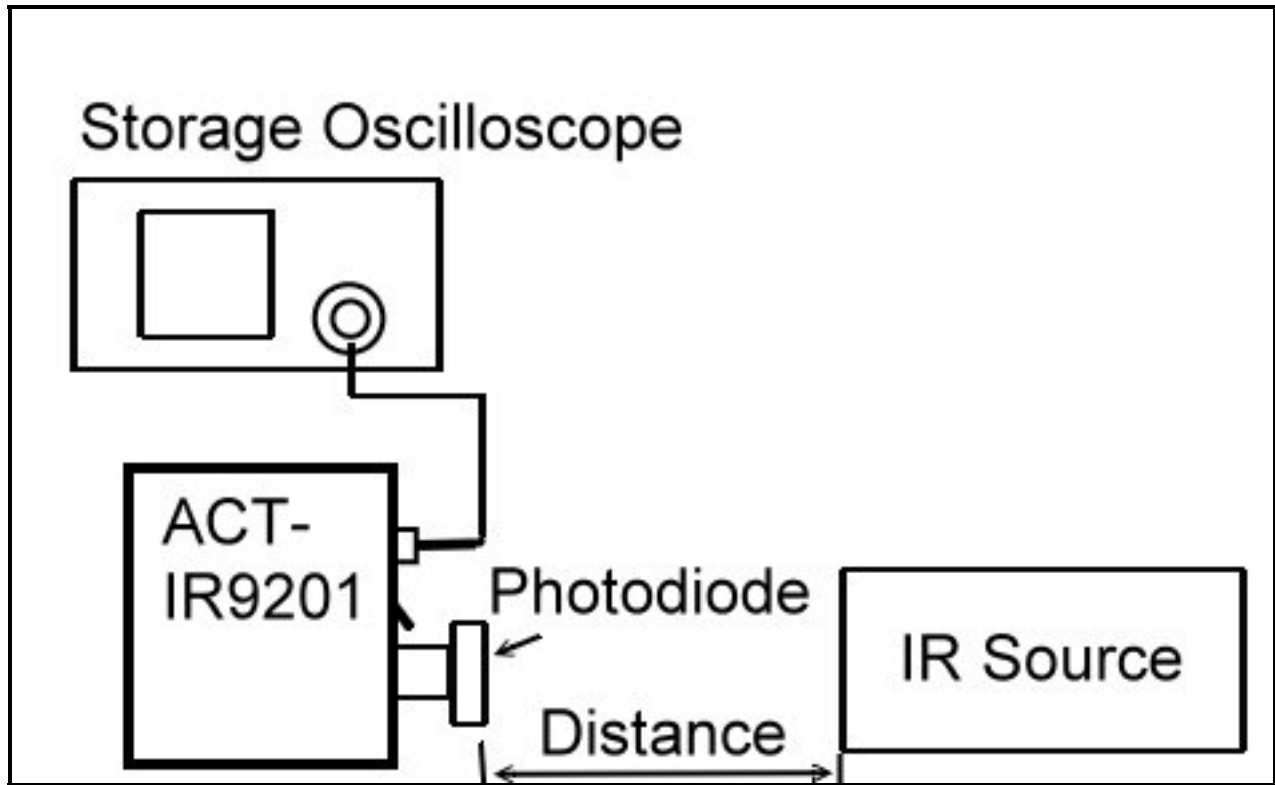
Note: DON'T touch the window of the photodiode.

4. Connect BNC cable to the OVC BOX.

(Note: The other end of BNC cable link to Digital Oscilloscope and set probe to **1X**).

5. Turn ON the Oscilloscope and OVC BOX.

4 TEST DIAGRAM



5 INTENSITY CALCULATION MODE

$$\text{Intensity} = (\text{Vo} \times \text{Distance}^2) / (\text{Area} \times \text{Responsivity} \times \text{R1})$$

Vo (volt) = $V_H - V_L$ (based on the waveform displayed on oscilloscope)

Distance (cm) = distance between Photodiode and DUT (Device Under Test) = **30cm**

Area (cm) = area of Photodiode = about **1cm²**

Responsivity (A/W) = **0.6034 A/W** (the average responsivity over 850 through 900 nm)

R1 = 500 ohms

So Intensity can be expressed as :

$$\text{Intensity} = (\text{Vo} \times 30^2) / (1 \times 0.6034 \times 500) = \text{Vo} \times 2.983 \text{ mW/sr}$$

(Because the Area, Responsivity and R1 are all fixed values, the constant 2.983 will only be changed when distance has been changed from 30cm.)

6 SPECIFICATION

- **Power:** 9 V DC, 6F22DT battery
- **Operating Temperature:** 0 °C to 60 °C (32 °F to 140 °F)
- **Storage Temperature:** -20 °C to 85 °C (-4 °F to 185 °F)
- **Dimension:**
130mm(L) x 130mm(W) x 30.5mm(H), 5.12"(L) x 5.12"(W) x 1.20"(H)
- **Weight:**
291 g (7.7 oz.)

7 PRECAUTIONS

To ensure trouble-free operation, please observe the following precautions:

Optical communications are easily affected by external light sources, weak batteries, transfer distance, transfer angle, etc. Any of these conditions may cause a data transfer failure, incomplete, missing or incorrect data. Make sure that the wireless interface is away from direct sunlight and other strong light source.

- Do not terminate arbitrarily during file transfer process between DUT and computers until finished. Otherwise DUT internal data integrity may be damaged, which is due to the violation of DUT's.
- Do not expose the unit to moisture, as this will damage the internal circuitry.
- Do not expose the unit to extreme temperatures. It should not be placed in direct sunlight or in a closed vehicle. Neither should it be placed near heaters nor other heat sources.
- Do not store the unit in a humid or dusty place.
- Use a soft, dry cloth to clean the unit. Do not use a wet cloth or any solvent.
- Do not drop the unit or handle the unit carelessly.

CAUTION:

- Never touch the pins of computer connection terminal. The internal circuits can be damaged by a static Electricity discharge. If this device requires any servicing, use only an ACTiSYS service dealer, an ACTiSYS approved service facility, or an ACTiSYS repair service.
- When exchanging data with host computer, be sure the appropriate serial communication port is available and is not in conflict with other peripheral device or software.

NOTE: Must be used with shielded cable only.

FOR YOUR RECORDS

For your assistance in reporting this product in case of loss or theft, please record below the model number and serial which are located on the bottom of the case. Please retain this information.

Model Number:

Serial Number:

Date of Purchase:

Place of Purchase:

All indicated copyrights and trademarks in the following pages are copyrights and trademarks of their respective corporations.

8 WARRANTY INFORMATION

THE FOLLOWING WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

ACTiSYS Corporation warrants the first consumer purchaser, for a period of one year from the date of purchase, that this Optical Power to Voltage Converter ("the Product") will be free from defective workmanship and materials, and agrees that it will, at its option, either repair the defect or replace the defective Product or part thereof at no charge to the purchaser for parts or for labor.

This warranty does not apply to any appearance items of the Product, any consumable items such as paper, ink ribbon, or batteries supplied with the Product, or to any equipment or any hardware, software, firmware, or peripheral other than the Product. This warranty does not apply to any Product the exterior of which has been damaged or defected, which has been subjected to misuse, abnormal service or handling, or which has been altered or modified in design, construction or interfacing. **Tampering With Label Voids Warranty.**

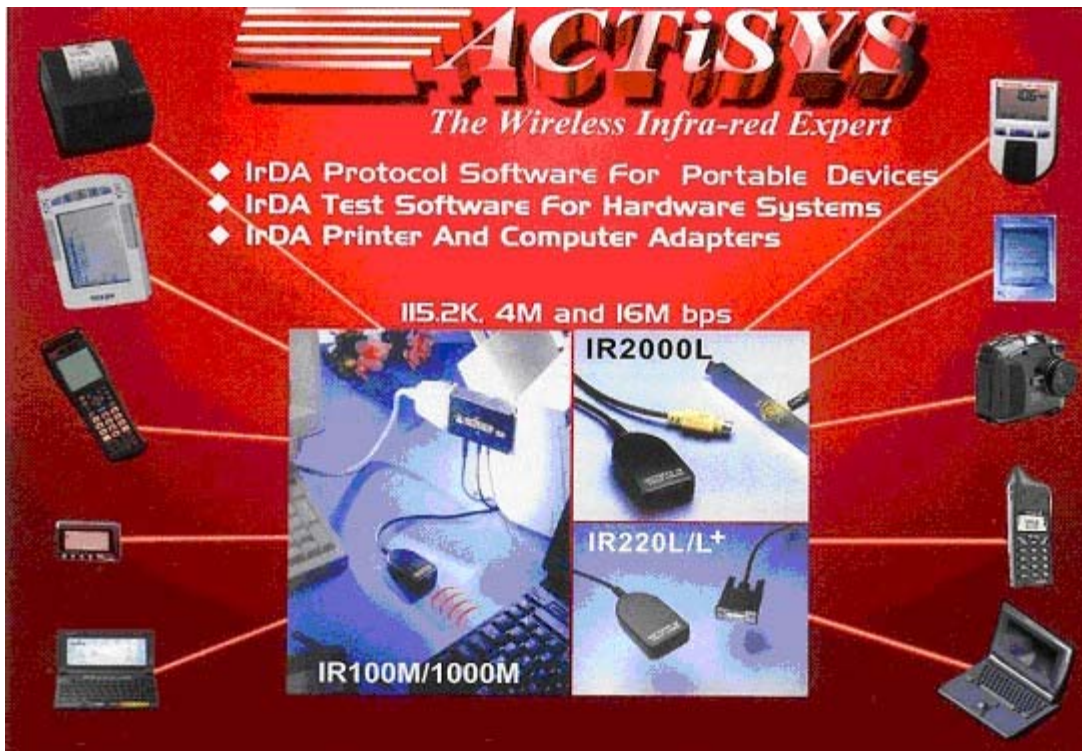
In order to enforce the rights under this limited warranty, the purchaser should mail, ship, or carry the Product, together with proof of purchase, to ACTiSYS.

The limited warranty described above is in addition to whatever implied warranties may be granted to purchasers by law. To the extent permitted by applicable law, ALL IMPLIED WARRANTIES INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO A PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

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9 CONTACT INFORMATION

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