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# **ACT-IR200L**

## **IrDA<sup>®</sup>/Raw IR/RC & ASK Serial Port Adapter**

### **User's Manual**



November 18, 2009  
Ver. 1.2.1.1

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**NOTE:** Much application software bundled with your device uses this dongle as a RAW IR, which means no IrDA<sup>®</sup> driver needed. In such a case, do Not install IrDA driver from Windows. Otherwise, you will get trouble in your operations. Hence we skip the IrDA driver installation procedure in this manual. If needed, please go to [http://www.actisys.com/Downloads.html#IR2x0L\\_IrDA](http://www.actisys.com/Downloads.html#IR2x0L_IrDA) to download its procedure.



**FCC & VCCI Compliance Statement**

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.

WARNING-FCC Regulations state that any unauthorized changes or modifications to this equipment not expressly approved by the manufacturer could void the user authority to operate this equipment

NOTE: This equipment has been tested and found to comply with the limits for Class B digital device, pursuant to Part 15 of the FCC Rules. 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:

- Increase the separation between the equipment and receiver.
- Reorient or relocate the receiving antenna.
- 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 helps.

This equipment is in the 2<sup>nd</sup> Class category (information equipment to be used in a residential area there to) and conforms to the standards set by the Voluntary Control Council For Interference by Data Processing Equipment and Electronic Office Machines aimed at preventing radio interference in such residential area.

When used near a radio or TV receiver, it may become the cause of radio interference. Read the instructions for correct handling.

NOTE: Must be used with shielded cable only.

**FOR YOU RECORDS**

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

Model Number	Serial Number
Date of Purchase	Place of Purchase

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## REVISION HISTORY

Revision History		
Revision	Date	Comment
1.0	05/15/2003	Created
1.1	03/28/2005	Added current description in Electrical characteristics
1.2	03/28/2006	Modified DSR description in Connector pin definition at page 5
1.2.1	10/19/2009	Corrected chapter 4. Baud Rate Selection Algorithms; reformat
1.2.1.1	11/18/2009	Revised for IR200L

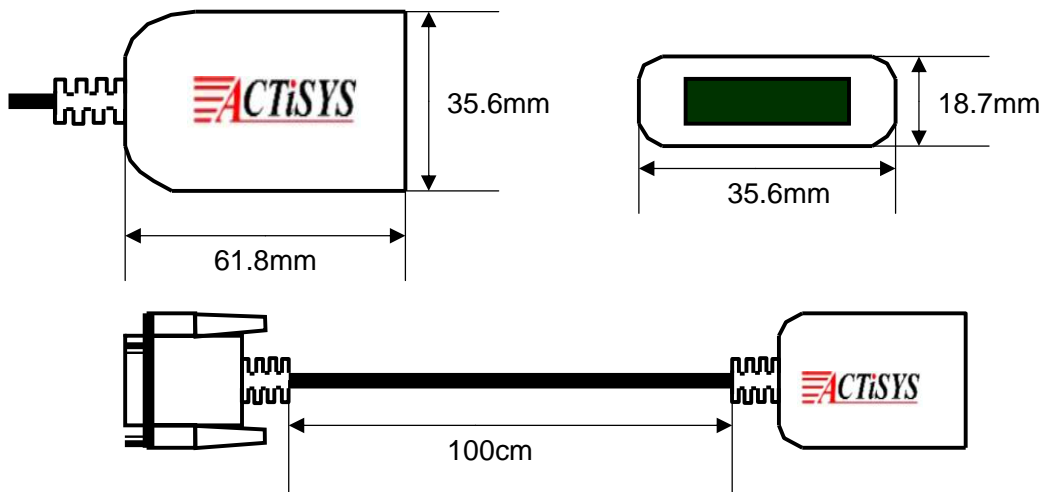
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## 1. Product Introduction

**ACT-IR200L** is a multi-mode IR RS232 serial port adapter: (A) It is an **IrDA® dongle** which supports 5 baud rates: 9.6k, 19.2k, 38.4k, 57.6k and 115.2k bps. (B) It is also a **Sharp ASK IR dongle** which supports 9.6k, 19.2k, and 38.4k bps. It can also play as a (C) **TV Remote mode** and (D) **Raw IR** as well.

It gets power from DTR and RTS in normal RS232 port. No external power required.



**ACT-IR200L**

## 2. Connector Pin Definition

Signal Name	Pin Number	Signal Description
DCD	1	Not Connected
Rx	2	Data transmitted from IR to PC
Tx	3	Data transmitted from PC to IR
DTR	4	Supplies power and selects baud rate
GND	5	Signal Ground
DSR	6	Not Connected
RTS	7	Supplies power and selects baud rate
CTS	8	Signal to indicate if IR200L is ready or not. High means ready.
RI	9	Not Connector

### 3. Electrical Characteristics

PARAMETERS	MIN.	TYPICAL	MAX.	UNITS
DC supply voltage	4.8	5.0	5.5	V
External power input	5.5	6.0	7.5	V
Supply voltage, VSS		0		V
Operating free-air temperature range, TA	0		40	°C
DC current (Ready mode)		2		mA
DC current (Active mode)		15		mA
Dc Current (Pulse Peak Value)		100		mA
RS232 signal threshold level	+/-3		±12	V

### 4. Transmission Characteristics

PARAMETERS	TYPICAL	UNITS
IR transmit pulse width	1.63	uS
Optical cone angle	+/-15	Degree
Transmission distance	1 to 200	cm
Receiver Latency	100	uS

### 5. Specifications

	SHARP ASK-IR:	IrDA-IR:
<b>Baud Rate:</b>	9.6, 19.2, 38.4 kbps	9.6,19.2,38.4,57.6,115.2 kbps
<b>Parity Bit:</b>	Odd	None
<b>Data:</b>	8 bit	8 bit
<b>Stop Bit:</b>	1 bit	1 bit
<b>Error Check:</b>	Check Sum	CRC

<b>Carrier:</b>	Infrared radiation (peak wavelength: 850 to 1050 nm)
<b>Sub-Carrier:</b>	500 KHz for SHARP ASK-IR and ASK(37KHz) for TV remote spec.
<b>Range:</b>	80 cm. For best results, from 20 to 60 cm (7.9 in to 1 ft. 11.6 in)

<b>Serial Interface:</b>	Cable Interface (to host computer)
<b>Signal Level:</b>	RS-232 Standards
<b>Connector:</b>	DB-9 female connector
<b>Power Source:</b>	PC RS-232 Serial Port
<b>Power Consumption:</b>	0.30mW (11mA max.)
<b>Operating Temperature:</b>	0°C to 40°C (32°F to 104°F)
<b>Weight:</b>	2.0 oz (54 g)

## 6. Technical Reference

### 1) Datasheet of CS8130 IR Transceiver:

[http://www.cirrus.com/en/pubs/proDatasheet/CS8130\\_F1.pdf](http://www.cirrus.com/en/pubs/proDatasheet/CS8130_F1.pdf).

### 2) Data Formats for IR Remote Control-(Vishay Document # 80071):

<http://www.vishay.com/docs/80071/dataform.pdf>.

### 3) SnapStream Knowledgebase on Remote Control designing:

[http://snapstream.helpserve.com/index.php?\\_m=knowledgebase&\\_a=viewarticle&kbarticleid=1296](http://snapstream.helpserve.com/index.php?_m=knowledgebase&_a=viewarticle&kbarticleid=1296).

### 4) Open source codes for IR200L Learning SW:

<http://www.lirc.org/>, and <http://winlirc.sourceforge.net/>.

### 5) For further **technical support**, please contact:

[tech-support@actisys.com](mailto:tech-support@actisys.com)

## 7. Warranty Information

ACTiSYS Corporation warrants the first end-user purchaser, for a period of 1 year from the date of purchase, that this wireless interface (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 INCLUDE THE WARRANTIES OF MERCHANT ABILITY AND FITNESS FOR USER ARE LIMITED TO A PERIOD OF 1 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.

Neither the sales personnel of the seller nor any other person is authorized to make any warranties other than those described above, nor to extend the duration of any warranties beyond the time period described above on behalf of ACTiSYS Corporation.

The warranties described above shall be the sole and exclusive remedy available to the purchaser. Correction of defects, in the manner and for the period of time described above, shall constitute full satisfaction of all claims, whether based on contract, negligence, strict liability or otherwise. In no event shall ACTiSYS Corporation be liable or in any way responsible, for any damages or defects in the Product which were caused by repair or attempted repairs performed by anyone other than ACTiSYS technician. Nor shall ACTiSYS Corporation be liable or in any way responsible for any incidental or consequential economic or property damage. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

### 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.

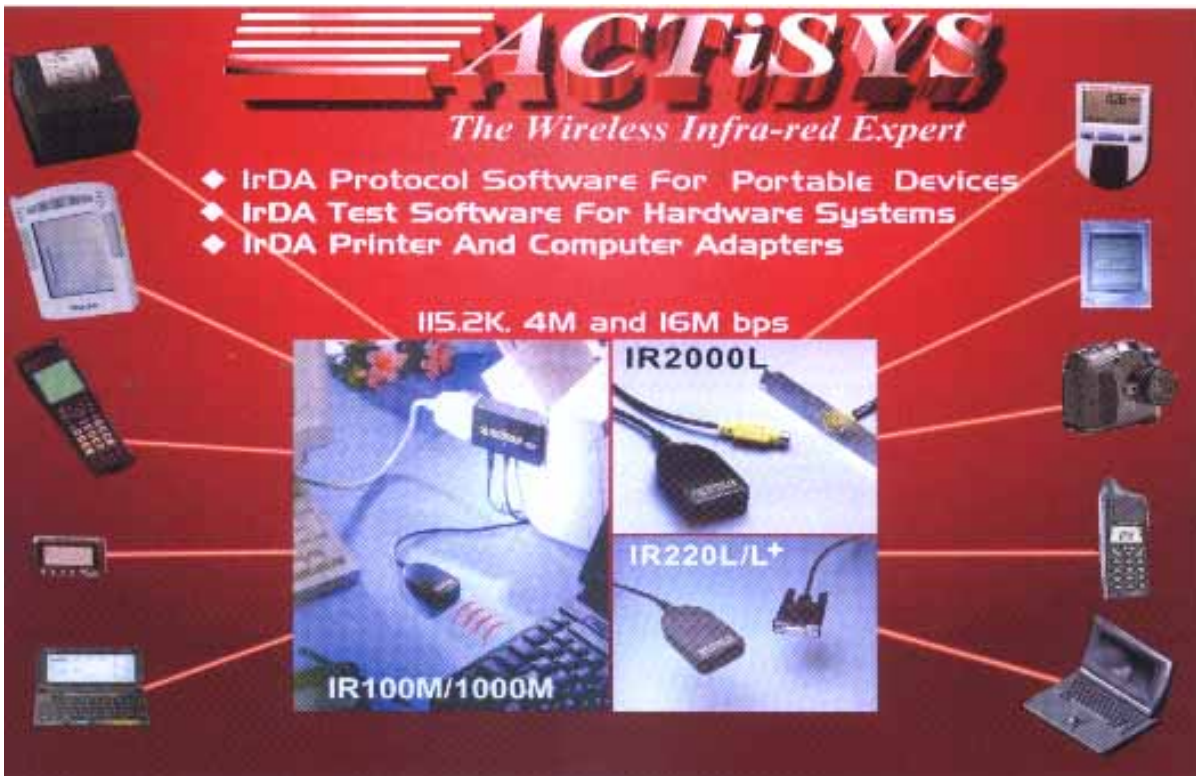
**Model Number:**

**Serial Number:**

**Date of Purchase:**



## 8. CONTACT INFORMATION



The advertisement features a red background with the ACTiSYS logo at the top center, which includes the tagline "The Wireless Infra-red Expert". Below the logo, three bullet points list the company's offerings: "IrDA Protocol Software For Portable Devices", "IrDA Test Software For Hardware Systems", and "IrDA Printer And Computer Adapters". The central part of the graphic is a collage of images showing various IrDA products and their applications. On the left, there is a printer, a PDA, a mobile phone, and a laptop. On the right, there is a PDA, a laptop, and another mobile phone. In the center, there are three inset images: the top one shows a computer mouse and keyboard with the text "115.2K, 4M and 16M bps" above it; the middle one shows an IrDA adapter with the text "IR200L" above it; and the bottom one shows another IrDA adapter with the text "IR220L/L+" above it. At the bottom left of the central collage, the text "IR100M/1000M" is visible.

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