

ACTiSYS

The Wireless Connectivity Expert



921 Corporate Way, Fremont, CA 94539, USA

Tel: +1-510 490-8024 Fax: +1-510-623-7268

Web: <http://www.actisys.com>, E-mail: irda-info@actisys.com

ACT-IR320L

LONG DISTANCE INFRARED ADAPTER

USER'S MANUAL



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REVISION HISTORY

Revision History		
Revision	Date	Comment
0.1	02/28/2002	Draft Preliminary Design Specification for internal review.
1.0	11/06/2006	Added LED behavior chapter & changed connection distance
1.0.0.1	04/23/2008	Updated Corporate Address & reformatted

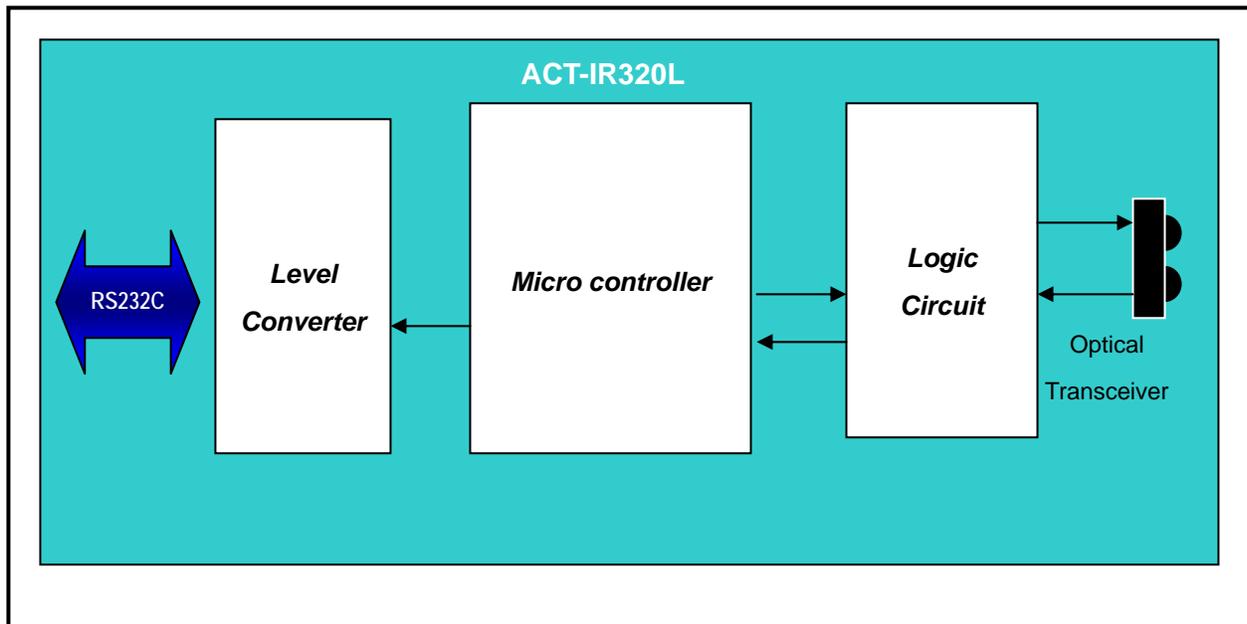
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1. OVERVIEW

The ACT-IR320L is a long distance infrared adapter that enables the host system with long distance infrared communication capabilities. The host system may be an industrial controller, a data collector, a medical instrument, or any other device. The interface between ACT-IR320L and the host is the traditional asynchronous serial data port (RS232C). Figure 1.1 shows the system block diagram.

Figure 1.1 System Block



2. FEATURES

- Long distance transmitting / receiving adapter by using 455 KHz ASK-IR technology.
- Supports maximum **30 meters** transmitting / receiving distance.
- Supports 9.6 kbps, 19.2 kbps and 38.4 kbps baud rate.
- Instantly converts RS232 Port to IR, without special IrDA[®] protocol SW and uses existing application SW.
- True cable-to-IR replacement using ASK-IR technology.
- No buffer in circuit, no delay caused.
- Need to be used in pairs.

3. APPLICATION DESCRIPTION

ACT-IR320L uses 455 KHz ASK-IR technology to support long distance transmitting / receiving. ASK-IR is a technology that based on sub-carrier and it is not compatible to IrDA[®]. Therefore, it should be **used in pairs**.

Once ACT-IR320L is connected to serial port of host device, it will enter into **ready mode**. The LED will be **on**. Two ways can make IR320L to enter into **active mode**: One is the host device sends some data to it by passing RxD pin. Another is that IR320L receives ASK sub-carrier from outside and passes those data to TxD pin. When IR320L is in **active mode**, the LED **will blink**.

ACT-IR320L detects RxD pin's level and turns the ASK sub-carrier on and off when it is sending data. Thus no need to care about baud rate setting. It's only limited by the frequency of ASK modulation. The baud rate supports up to 38.4 kbps.

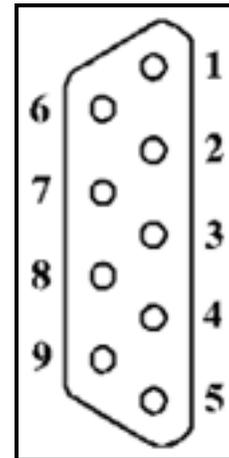
Generally, there are two ways to connect to a serial port: One is 3-wires (Flow Control free), while another is 9-wires (Flow Control enabled). Based on ACT-IR320L no buffer in circuit, it is a 3-wires operating dongle. It doesn't have to enable flow control mechanism. This means that it doesn't detect the DSR and CTS pins from host device and always pull DTR and RTS pins to high. Application program itself should take care of flow control.

The radiant intensity of ACT-IR320L relates to the angle between those two dongles that face to face. The angle of the half intensity is $\pm 10^\circ$. It will get more effective performance by adjusting their orientation angle.

4. DTE-DB9M CONNECTOR DESCRIPTION

ACT-IR320L is a DTE adapter, like serial port on PC. It can be connected to any DCE device directly. If you want to connect this adapter to a Notebook or Desktop computer, the DB9F-to-DB9F converter is needed. The converter plays like a null-modem, redirecting serial port signals from DTE to another DTE.

Pin No.	Name	Descriptions	I/O
1	CD	Data Carrier Detect	I
2	RXD	Receiver Data	I
3	TXD	Transmitter Data	O
4	DTR	Data Terminal Ready	O
5	GND	Signal Ground	GND
6	DSR	Data Set Ready	I
7	RTS	Request to Send	O
8	CTS	Clear to Send	I
9	RI	Ring Indicator	I



Front View

5. CHARACTERISTICS AND SPECIFICATIONS

Parameter	Min.	Typical	Max.	Units
DC supply voltage	5.0	7.5	12	V
Supply voltage, VSS		0		V
Operating temperature range	0		60	°C
DC current (Ready mode)		2		mA
DC current (Active mode)		200	300	mA
RS232 signal threshold level	+/-3	+/-12	+/-25	V

6. LED BEHAVIOR

Activities Status	LED Behavior
COM port closed & disconnected	LED off
Ready (COM port opened & connected) mode	LED on
Active (Data transfer) mode	LED blinks once per bit

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.



8. CONTACT INFORMATION

GO WIRELESS WITH ACTiSYS IR



ACTiSYS
The Wireless Infra-red Expert

- ◆ IrDA Protocol Software For Portable Devices
- ◆ IrDA Test Software For Hardware Systems
- ◆ IrDA Printer And Computer Adapters

115.2K, 4M and 16M bps

IR100M/1000M

IR2000L

IR220L/L+

The graphic features a red background with the ACTiSYS logo at the top. Below the logo is a list of three bullet points. In the center, there are three inset images: a computer setup with a mouse and keyboard labeled 'IR100M/1000M', a close-up of an IR adapter labeled 'IR2000L', and another IR adapter labeled 'IR220L/L+'. Surrounding these central elements are various electronic devices including a printer, a PDA, a mobile phone, a camera, and a laptop, all connected by red lines radiating from the center.

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