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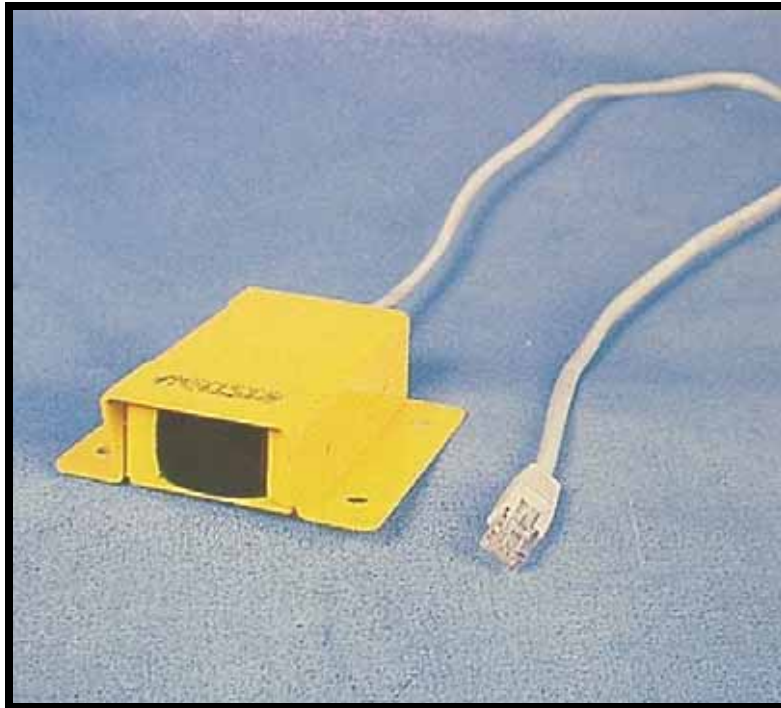
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ACT-IR220LR/IR220LRS/IR220LRB0/IR220LRN#

IR Serial Port Adapter

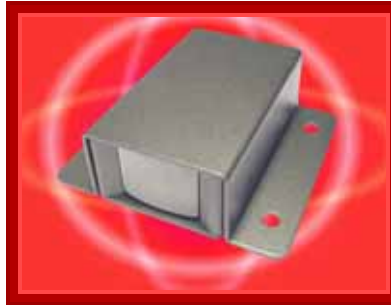
User's Manual



June 18, 2014

Version 1.1.2

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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 2nd 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 YOUR 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	09/04/2006	• Initial release
1.1	10/20/2010	• Updated company address
1.1.1	10/21/2010	• Included IR220LRB0 & LRN#; differentiated LR, LRS, LRB0 & LRN#
1.1.2	6/18/2014	• Corrected Operating Temperature

ACTiSYS reserves the right to make changes without further notice to any products herein to improve reliability, function or design. ACTiSYS does not assume any liability arising out of the application or use of any product or circuit described herein.

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1. OVERVIEW

ACT-IR220LR/IR220LRS/IR220LRB0/IR220LRN# is a Ruggedized version of ACT-IR220L dongle series. Where optional cable differentiates the model as follows:

ACT-IR220LR	ACT-IR220LRS	ACT-IR220LRB0	ACT-IR220LRN#
RJ45 Cable	RJ45 Shielded Cable	RS232 DB9F Cable	RS232 DB9F Cable Baud Rate fixed at #

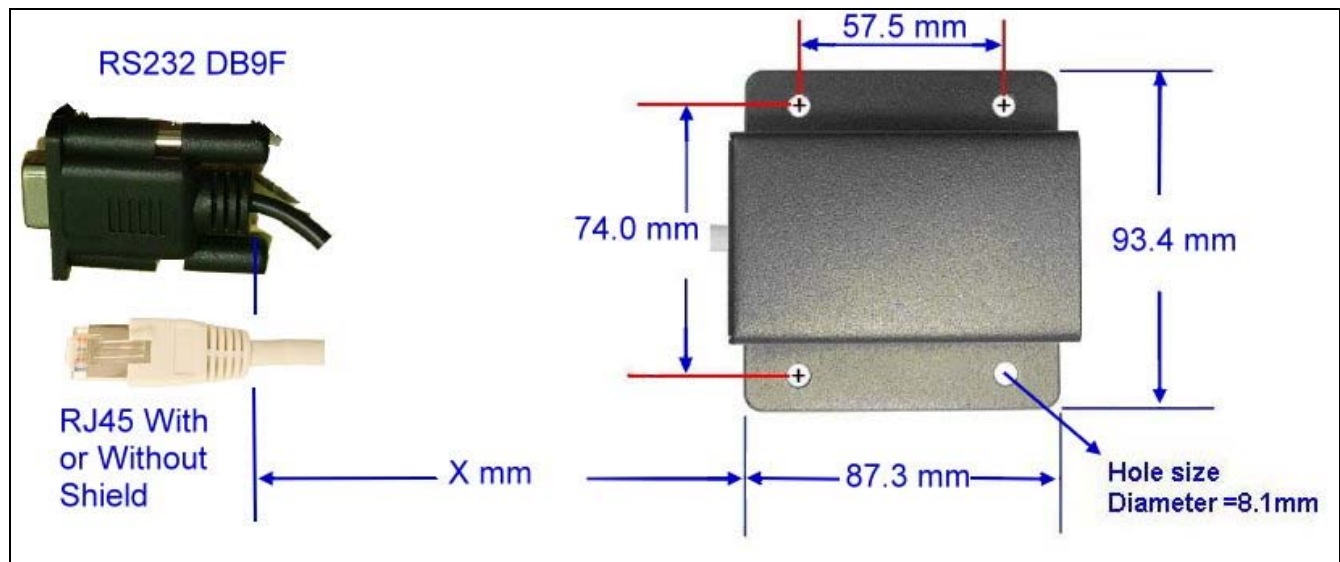
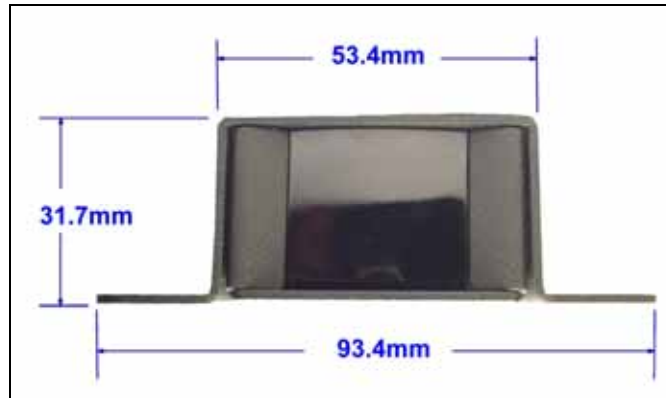


Fig. Cable length $X = 120$ cm of RJ45 Cable for IR220LR & IR220LRS or
 $= 180$ cm of RS232 Cable for IR220LRB0 & IR220LRN#

Additional Extension Cable (Shielded or non-Shielded) RJ45-RS232 (DB25F) 180 cm is optional for ACT-IR220LRS or IR220LR.

2. CONNECTOR PIN DEFINITION

Signal Name	Pin Number	Signal Description
GND	1	Signal Ground
RxD	2	Data transmitted from IR220LR/220LRS/LRB0 to PC
CTS	3	Not Connected
TxD	4	Data transmitted from PC to IR220LR/220LRS/LRB0
GND	5	Signal Ground
RTS	6	Supplies power and selects baud rate
CTS	7	Not Connected
DTR	8	Supplies power and selects baud rate



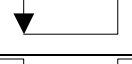
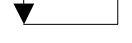
Note: If user has only TX,RX and GND signals but no RTS and/or DTR signal lines then to supply power externally user can feed via RTS/Signal line pin number to supply power.

3. BAUD RATE SELECTION ALGORITHMS

3.1. ACT-IR220LR/LRS/LRB0

They support 4 baud rates: 9.6, 19.2, 57.6 or 115.2 kbps. You can select any one of them dynamically based on RTS/DTR signal line as explained in below state table from your application.

ACTiSYS provides a Programming Guide and Sample Code for user if required.

Symbol	DTR	RTS	Descriptions
9.6 kbps		Don't Care	Basic backward compatible modes
19.2 kbps	Hi	1 x 	
57.6 kbps	Hi	2 x 	
115.2 kbps	Hi	3 x 	

3.2. Customized Model ACT-IR220LRN#

This provides single speed pre-fixed at factory as IR220LRN#, where # represents one of the baud rates.

No.	Selected Baud Rate	Model Name
0	9.6 kbps	IR220LRN96
1	19.2 kbps	IR220LRN19
2	57.6 kbps	IR220LRN57
3	115.2 kbps	IR220LRN115

4. ELECTRICAL CHARACTERISTICS

PARAMETERS	MIN.	TYPICAL	MAX.	UNITS
DC supply voltage	4.8	5.0	5.5	V
Supply voltage, VSS		0		V
Operating free-air temperature range, TA	-30		70	
	-22		158	
DC current (Ready mode)		2		mA
DC current (Active mode)		100		mA
Input signal threshold level	+/-3		±12	V

5. TRANSMISSION CHARACTERISTICS

PARAMETERS	TYPICAL	UNITS
IR transmit pulse width	1.63	uS
Optical cone angle	+/-15	Degree
Transmission distance	0 to 100	cm
Receiver Latency	100	uS

6. SPECIFICATIONS

Physical Layer	IrDA – 1.0 (SIR) compatible
Communication Dist. & Speeds	Distance of 0cm to 100cm (using 500-ft CAT-5 cable from standard RS232 port of desktop PC!)
Connection	An integral 4-ft CAT-5 cable with RJ45 (M) connector
Power Source	RS-232 port power only. No external power required.
Power Consumption	0.3W (Peak)
Dimensions / Weight (Excluding Cable)	Dimension : (Top portion) 3.8"(L) X 2.1"(W) X 1.25(H) 97mm X 53.4mm X 31.7mm (Mounting bottom portion) 3.4"(L) X 3.7"(W) X 1.25(H) 87.3mm X 93.4mm X 31.7mm Weight : 18oz (487gr.)
Operating Temperature	-30°C to 70°C (-22°F to 158°F)
Ruggedization	Meets NEMA enclosure type 6. Passes Drop test , Direct heat test , Water proof test.

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 advertisement features a central red background with the ACTiSYS logo and tagline. Below the logo, three bullet points list the products: IrDA Protocol Software For Portable Devices, IrDA Test Software For Hardware Systems, and IrDA Printer And Computer Adapters. The text '115.2K, 4M and 16M bps' is positioned above a central collage of images. This collage includes a printer, a mobile phone, a laptop, and various IrDA adapters. The adapters are labeled 'IR100M/1000M', 'IR2000L', and 'IR220L/L+'. The background is decorated with a grid of red lines and small images of various electronic devices.

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