IrCOMMS
Infrared Communicator

Model IC1

OPERATION MANUAL

HYDROLOGICAL SERVICES Pty Ltd
48-50 Scrivener Street
Liverpool NSW 2170
Australia
Ph. 61 2 9601 2022 Fax. 61 2 9602 6971
Internet: www.hydrologicalservices.com
E-Mail: sales@hydrologicalservices.com

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1. Introduction

The Hydrological Services IrComms IC1 has been designed using surface mount technology to provide a small, robust, Infrared interface for retrieving data from a MiniLog and River Hawk data logger in the field using a PDA or Notebook PC. The unit is powered by 2 x AA alkaline batteries. The indicator LED gives immediate feedback of the battery condition as well as the Infrared connection status.

Please note that this device is intended for short term use to retrieve data, or change settings – it is not intended to provide a permanent Infrared interface to a data logger.

2. Product Overview

2.1 Overview

The Hydrological Services IrComms Communicator is an Infrared to RS232 interface with several unique features.

- DB9 Male connector for direct connection to the HS MiniLog and River Hawk.
- Self powered by 2 x AA alkaline batteries.
- Protected against incorrect installation of batteries.
- Provides 6V DC power to the MiniLog during a communication session.
- Automatically powers on when plugged into the MiniLog or River Hawk. (when unplugged, power consumption is zero)
- Monitors and indicates the internal AA battery status.
- Indicates the Infrared connection status.
- Rubber sided enclosure for positive grip.
- Up to 2m (30ft) range.

3. Installation

The IrComms has a single DB9 male connector, which has been configured for direct connection to the HS MiniLog ML1 and the River Hawk AD375AL. Note that the IrComms battery is not connected until it is plugged into the MiniLog – at which time pins 7 is looped to pin 8. This then powers the IrComms unit and in turn provides 5.5V on pin 4 to power the MiniLog during the communication session. When the IrComms unit is unplugged from the MiniLog, the battery is disconnected and no power is consumed.

3.1 Hardware Connections

The DB9 male connector on the IC1 is as follows :-

Pin No.	IrComms IC1 Signal Name (DB9 Male)		Signal Direction	ML1 Signal DB9 Female
1	N.C.		⇦	O.C. Output
2	Rx (RS232 Serial data input)		⇦	Tx
3	Tx (RS232 Serial data output)		⇨	Rx
4	Pwr to MiniLog (5.5V DC)		⇨	ExtPwr
5	Gnd			Gnd
6	N.C.			Ext Pwr
7	Battery Out (2 x AA = 3V DC)		⇨	Ext Pwr
8	Battery In (3V DC)		⇦	Ext Pwr
9	N.C.		⇨	Bucket Tip I/P

Notes:

1. When the IC1 is directly connected to a MiniLog the following handshake signals are linked :
   - Pins 4 and 6 are linked together inside the ML1.
   - Pins 7 and 8 are linked together inside the ML1.

2. When the IC1 is directly connected to an ML1, sufficient power is extracted on pin 4 to power the ML1 – which prevents power drain from the internal ML1 lithium battery while communications is in progress.

3.2 Baud Rate

The IrComms IC1 is programmed to communicate at 9600 baud 8/N/1. Therefore the MiniLog **must** also be setup for communications at 9600 baud.

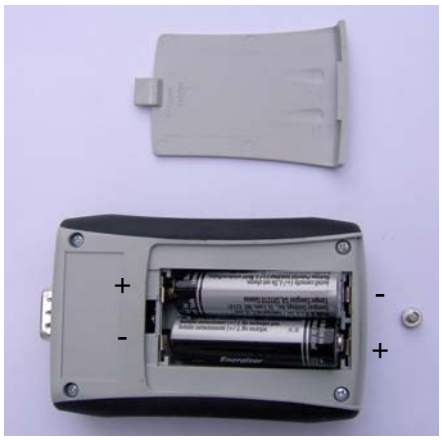
3.3 Batteries

The IrComms IC1 operates on 2 x AA alkaline batteries. To change the batteries :

- Remove the screw securing the battery cover.

- Slide open the battery cover.

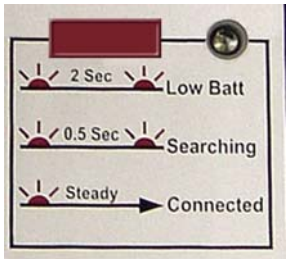
- Replace the 2 AA batteries – noting the polarity.



- Replace the battery cover and the securing screw.

3.4 LED Indicator

The LED Indicator serves 4 functions :



- **Low battery indicator** – when the IC1 is first plugged in, the battery voltage is checked, and if it falls consistently below 2.8V, the LED will flash once every 2 seconds. Even with a low battery, the IC1 will connect and continue to operate for as long as possible. (It is however advisable to change the batteries.)

- **Searching** – The IC1 is searching (or waiting) for an Infrared connection. During this time the LED flashes once every 0.5 second.

- **Connected** – When a valid Infrared connection has been established, the LED will turn on steady.

3.5 Connection

Simply plug the IrComms Communicator into the MiniLog. The red LED will start flashing, indicating it is searching (or waiting) for a Infrared connection.

If physical space does not permit the IrComms to be plugged into the MiniLog, then use a DB9 male to DB9 female cable (1 to 1). This is the same cable that is used to provide communications between the MiniLog and a PC.

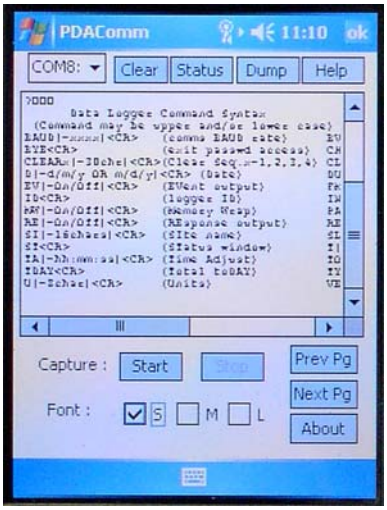
4. Operation

4.1 Connection to a PC or PDA

Once the IrComms Communicator is plugged into the MiniLog or River Hawk, the operator must connect to it from their PC or PDA via an Infrared connection. Consult your PC or PDA instruction manual for instructions on this procedure. (This infrared link will create a pseudo comm. port in the PC or PDA)

4.3 Comms Applications

When using a PDA, Hydrological Services have a custom communications application called PDAComm, which provides a simple "HyperTerm" like interface to the MiniLog. Buttons allow commonly used commands such as Status, Dump, Help to be easily executed, and the popup keyboard allow any command to be performed. Data can also be captured to a file, for later "ActiveSync" transfer to a PC.

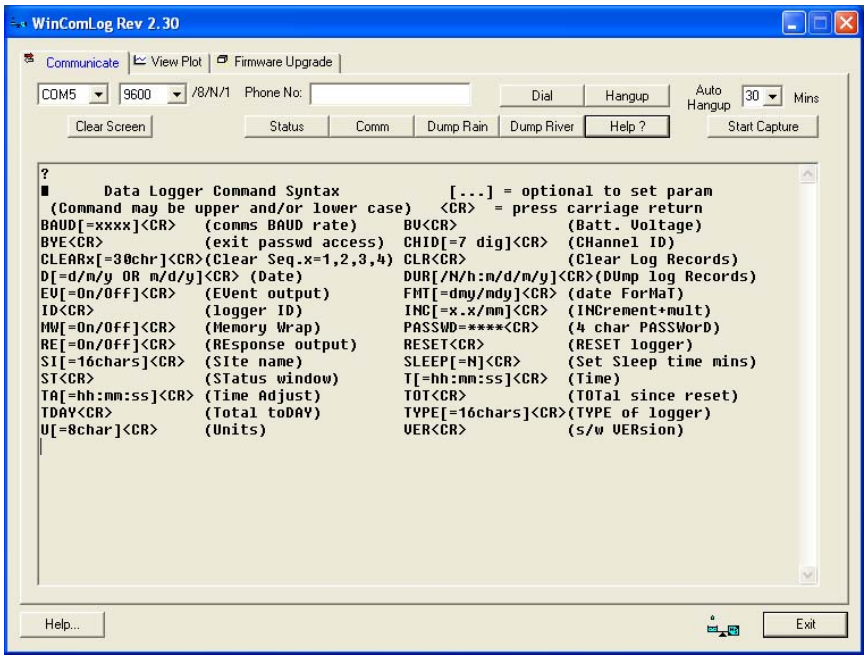


When using a PC (or notebook), Hydrological Services have a full featured comms application called WinComLog, which also provides a simple "HyperTerm" like interface to the MiniLog. Simply start the application and select the appropriate COM port.

The LED on the IrComms should come on steady, to indicate a connection is established.

Test communications by clicking on Help a few times. A screen full of help information should appear.

WinComLog allows graphing of the data as well as upgrading firmware.



5. Specification

5.1 Hardware Specification

Infrared	Supports IrLAP, IrLmp, Lm-IAS, IrComm Protocols Up to 2m range
Communications	RS232 Port (Tx, Rx) @ 9600 baud 8/N/1
Connections	1 x DB9 Male
Indicators	LED indicator for Battery and Infrared status
Power Source	2 x Internal AA alkaline cells 30mA giving 80 hours continuous operation translating to about 2 to 4 months of normal use.
Dimensions	97mm x 60mm x 27mm (L x W x D)
Weight	120 grams
Environmental	-20C to + 70C at 95% RH Non Condensing (No IP rating)