

# RK-900-HDTC User's Manual Rev 1.0



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## **Document Control**

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Engineering Review		
Marketing Review		
Approved -		
Engineering		
Approved - Marketing		

## **Revision History**

Revision	Author	Date	Description
1.0.0	TRM	11/2/02	Document Created

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## 1. Description

The RK-900-HDTC is a rapid-development/evaluation kit for the EWD-900-HDTC half-duplex data transceiver. Included in the kit is:

- 1-Rapid Development Case
- 1-Rapid Development Code and Documentation CD
- 2-EWD-HDTC Rapid Development Boards
- 4-EWD-900-HDTC modules
- 2-900 MHz antennas
- 2-RS-232 cables
- 2-Battery power harnesses
- 1-Package of Batteries

## 2. Rapid Development Kit Setup

- Attach battery power harness to pins 2 and 3 of jumper labeled JP1 POWER N. Make sure that the red wire is attached to pin 2 and the black wire is attached to pin 3.
- Make sure that pins 1 and 2 of jumper labeled JP3 POWER SEL are shorted. This selection bypasses the on-board voltage regulator. Take care not to apply more than 3.3VDC to pin 2 of JP1 when JP3 is configured this way.
- Make sure that DIP switches 1-3 are all "off".
- If you want to run the board in Program Mode, DIP switch 8 should be "on". When power is applied to the board, LEDs DS6 and DS5 will illuminate.
- If you want to run the board in Wireless Link Mode, DIP switch 8 should be "off". When power is applied to the board, LED DS6 will illuminate while DS5 remains dark.
- Connect board to PC with supplied serial cable.
- Accept license agreement and install PC software.
- Run PC software. Kit is ready to go. Repeat steps 1-8 for other board/computer.

## 3. Rapid Development Kit Operation

The RK-900-HDTC comes with Windows software to show some of the features of the EWD-900-HDTC. The software works with the board in two basic modes: Program mode and Wireless Link mode.

### 3.1. Program Mode

Program mode allows the user to setup wireless link parameters, activate and deactivate the transmitter and receiver, perform bit error rate testing (with another board acting as the source), view the contents of the module's registers, and the contents of the non-volatile module memory.

In order to activate the Program mode, you must ensure that DIP switches 1, 2, and 3 are off and DIP switch 8 is on.

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Write Register	Set Rx and Tx Channels	Register View PROM View Wireless Link Setup
	25 🔶	Wireless Link Speed
1AIN 💌	• 915MHz C 868 MHz	
		UART Speed
		Channels Rx Tx 25 € 25 € Setup Link Parameters Transmission Power DxFF
	Set Tx On 128 🜩	
		25 🛫 🔁
Read Registers	Set Rx On	Setup Link Parameters
Calibrate	RESET	
	Sleep	Transmission Power
	quency, MHz Calculated Offset	
914.904	<u> </u>	
Start BET Get /	Analog	
MHz C 868 MHz C RSSI	СТС	
0xE7	<u>^</u>	

### 3.2. Wireless Link Mode

Wireless link mode provides a way to evaluate the operation of the modules. Wireless link parameters are setup in the Program mode. Your boards come pre-programmed with optimal values for the wireless link- there is no need to reconfigure them unless you wish to.

Type text in the edit box at the bottom of the screen. When you press ENTER, the message will be sent over the air to the other board. Messages that you send are indicated in the large window with a prefix of "Local>". Messages received from the board will be prefaced by "Remote>".

Currently, the wireless link operates at a maximum speed of 9600 baud, utilizing an over-the-air speed of 38400 baud (Manchester Encoded, 19200 effective) with no flow control. We will be providing a free upgrade that will allow 19200 baud COM speed and over-the-air speed of 76800 baud (Manchester Encoded, 38400).

EWD-900-HDTC Evaluation System Preview	
Program Mode Wireless Link Mode	
<pre>Pemote&gt; Pemote&gt; Wireless Link Software VI.0.0 Pemote&gt; (0: 2002, Radiotronix Inc. Pemote&gt; VIIIsing the following versions of APIs Pemote&gt; RAPE: VI.0.3 UCAPI: VI.0.2 PACKETAPI: VI.0.1 Pemote&gt; Local&gt; Hello. This is a message to the other board Pemote&gt; Hello. This is a message from the other board Hello. This is a message to the other board</pre>	
reilo. This is a message to the other board.	

Figure 2, PC software in Wireless Link Mode

### 4. Updates

Check the Radiotronix website periodically for software and documentation updates (http://www.radiotronix.com). These updates are provided free of charge.