Exhibit 8: User's Manual

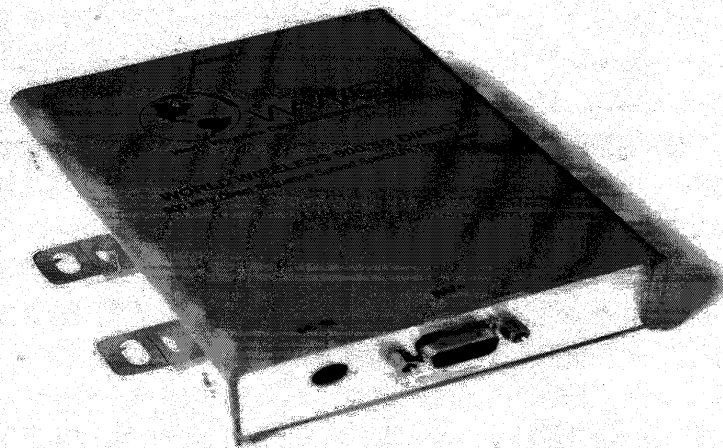A copy of the user's manual is enclosed below. The compliance statement for the 900 SS Direct is contained on page 4 of the manual:

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World Wireless 900 SS Direct

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Introduction

The **900 SS Direct** is a direct sequence spread spectrum radio. It has an RS-232 interface that can be connected to a computer or any other equipment that has RS-232 capability. The radio is capable of functioning over an industrial temperature range and can communicate at either 4800 or 9600 bits per second (bps) depending on the option ordered. Because the radio uses spread spectrum technology, it is highly secure, and has good interference immunity. The radio operates in the license-free, 900 Mhz ISM Band eliminating the need for a customer to obtain an FCC frequency license.

The applications of this radio are limited only by the need and imagination, some examples are:

- Short/Long Distance Telemetry
- Weather Stations
- Wireless Security Stations
- Remote Data Collections
- SCADA Applications

Features include:

- Easy programming with transparent protocols
- Transmission distance of over 35 miles
- Low power consumption
- Simple antenna connections
- Industrial temperature range
- Affordable

Models Available:

Fixed Baud Rate Units: 4800, 9600 Baud (Baud rate is set at the factory. Specify when ordering.)

Specifications:

Frequency Range:	902 to 928 MHz
Data Rate:	4800 or 9600 bps
Line of Sight:	35 plus miles (depends on antenna type and terrain)
Modulation Type:	Direct Sequence spread Spectrum
Data Protocols:	8 data bits, no parity, 1 stop bit, transparent (no protocol). CTS (hardware) handshaking is required above 4800 bps
Operating Temperatures:	-40°C to 85°C, (-40°F to 185°F)
Data Connection:	9 pin DBF
RF Connector:	TNC reverse polarity
Power Requirements:	Voltage +9 to +15 VDC; Current 130mA on receive and 800 mA on transmit
Transmission Power:	500 mW (+27 dBm)
Power Connector:	2.1mm Barrel
Receive Sensitivity:	-100 dBm nominal
Size:	5.75 x 4.5 x 1.5 inches

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900 SS Direct

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FCC Compliance Warning

Changes or modifications to the 900 SS Direct Data Radio not expressly approved by World Wireless Communications could void the user's authority to operate the radio.

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.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment in to an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

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Hardware Requirements

Antennas

The **900 SS Direct** may be used with an approved 50-ohm antenna having a gain of 6 dBi or under. The antenna connector is a reverse polarity TNC connector. A 2.2 dBi antenna is provided in the developer's kit. Several other antenna models certified by the FCC for use with this radio are available through **World Wireless Communications.**
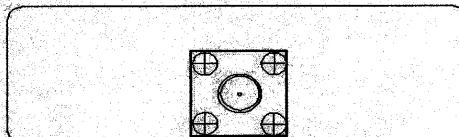
Reverse Polarity TNC Connector
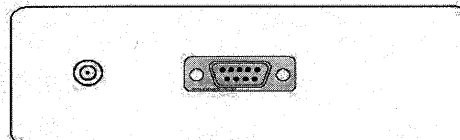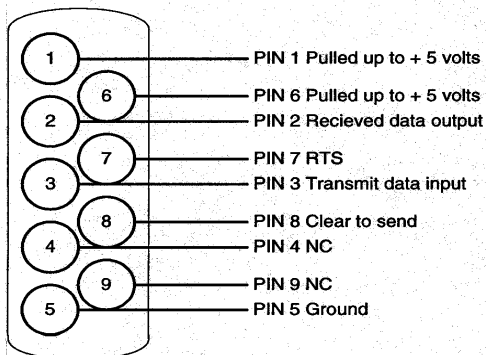
Power Supply

The **900 SS Direct** requires a maximum of 15 Volts DC and a minimum of 8.5 Volts DC at 1200mA. For users requiring an AC to DC transformer, make sure **the center conductor is positive,** or use the adapter provided by **World Wireless** in the developer's kit. Additional AC adapters may be purchased separately.
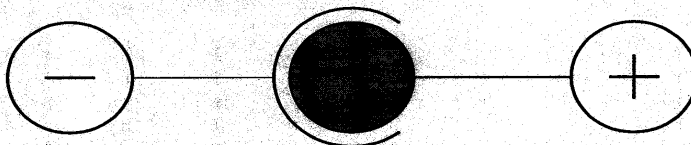
A 2.1mm Center Positive Connector

Data Interface

The data interface is a standard RS-232-C interface. The data connector is a female DB9. Pin 1 is data carrier detect, (on this radio pin 1 is tied high internally). Pin 2 is the received data output. Pin 3 is the transmit data input. Pin 4 is not connected. Pin 5 is ground. Pin 6 is data set ready, (on this radio pin 6 is tied high internally). Pin 7 is the request to send input. Pin 8 is the clear to send output. Pin 9 is not connected.

PIN 1 Pulled up to + 5 volts
PIN 6 Pulled up to + 5 volts
PIN 2 Recieved data output
PIN 7 RTS
PIN 3 Transmit data input
PIN 8 Clear to send
PIN 4 NC
PIN 9 NC
PIN 5 Ground

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Operation

Before powering up the **900 SS Direct** an antenna must be attached to the antenna port and properly oriented. After the antenna is connected, the user must connect a data source to the data port. After these two conditions are met the power may be supplied at the power jack.

When in operation this radio behaves like a half-duplex virtual wire. The only conventions that must be followed are data format, data rate, and clear to send (CTS) handshaking. The **900 SS Direct** expects asynchronous data in the format of eight data bits, one stop bit, and no parity. When interfacing to a laptop or a PC, be sure to use CTS hardware flow control. Data that is sent when the clear to send is not asserted (false) may be lost. In other words, the host data source or PC should not send data when CTS from the radio says that it is not ready to receive more data. Note that a null-modem cable is not necessary. On power-up the radio is in receive mode. To transmit send a character from the data source.

Also note that there is no character echo back from the radio. If you want to visualize what is being sent as well as received, you will need to enable "echo" or "half duplex" mode in your terminal software.

Be aware of the necessary usage of hardware flow control for baud rates of 4800 bps or higher. You will need to set the flow control on your PC application to "hardware flow control". This will ensure that the radios do not try and send more data while CTS indicates that the radio channel is busy.

BASIC STEPS FOR QUICK CONNECTION OF RADIOS:

- Attach a 50 ohm 915 MHz antenna to antenna port
- Connect data source to the data port of the radio
- Apply power via the power jack

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Frequency Selection

To change the frequency of the 900 SS Direct radio, it is necessary to remove the cover and change the internal jumpers. There are four frequencies available as indicated below:

World Wireless 900 SS Direct

Set Frequency Using Jumpers (■) As Shown:

905 MHz.

910 MHz.

915 MHz.

923 MHz.
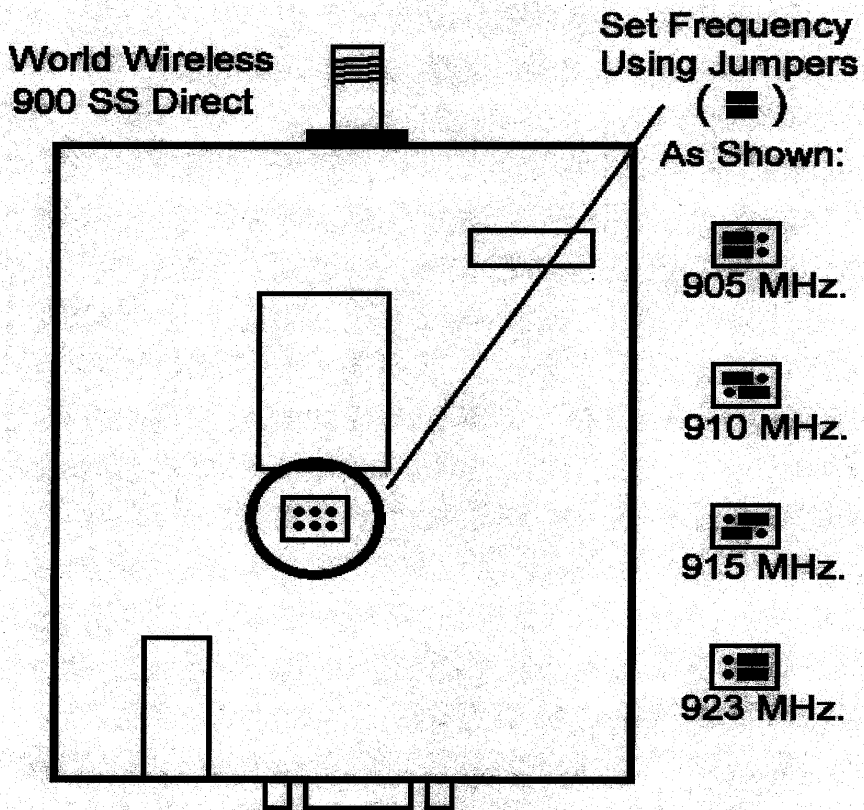
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