



## Preliminary Data Sheet

# ***Micro Chirper Model MChirp-915*** Reconfigurable Data Link Radio

### **FEATURES**

- Very low cost
- Wide programmable frequency range – 30 MHz to 5 GHz
- Utilizes integrated COTS spread spectrum hopping transceiver
- Built-in 1024 node mesh networking
- Point-point, point-multipoint, peer-peer, and store forward
- Small and light weight – less than 1 cubic inch, 2 oz.
- Low power consumption – excellent power management, less than 750 mw for transmit, 400 mw in receive with 900 MHz transceiver
- Capable of up to 100Kb/s with 900 MHz transceiver, 500 Kb/s with 2.4 GHz transceiver
- Extremely flexible programming – through PDA, smart phone or laptop with Micro-USB, with tailorable serial port, or with miniature switches
- Easily adaptable to work with a variety of COTS products

### **DESCRIPTION**

The Micro Chirper provides a low cost wireless data link solution to translate up or down in frequency according to user settable commands.

The transmitter may be implemented with the user-specified power output and frequency band(s), using low-risk Commercial Off The Shelf (COTS) components. Frequency coverage is 30-5000MHz, with a small guard band around the IF frequency of 900 or 2450 MHz.

The translator frequency may be controlled one of three ways, all using the onboard PIC microcontroller:

1. Miniature switches or jumpers to select preset frequencies
2. Micro-USB connector that allows a smart phone, PDA or PC to program a channel
3. Tailorable serial port that allows ANY device to program the frequency, including the Wi-Fi device or its controller

*Specifications subject to change without notice as we improve our products*

*For further information, contact: Wireless Innovations Inc*

*Tel. 443-324-0977, Email [info@wirelessinnov.com](mailto:info@wirelessinnov.com)*



The standard translator requires no T/R switching. Should an additional LNA or power amplifier be required, the transmit signal from the transceiver node can be used to drive a COTS T/R switch.

The microcontroller operates in conjunction with a very low power, miniature, SPI-bus real time clock that may be used for other sensor applications. This may be used to schedule event, frequency changes, etc. The microcontroller can control the sleep mode of the transceiver, sensors, translator, and microcontroller itself.

## SPECIFICATIONS

### PARAMETERS

<b>Frequency Coverage</b> .....	30MHz-5GHz (Guard band around IF)
<b>Transmission Bandwidth</b> .....	Up to 100Kb/s with 900 MHz transceiver Up to 500 Kb/s with 2.4 GHz transceiver
<b>Translator Tune Time</b> .....	1 msec
<b>Waveform</b> .....	FSK with 900 MHz transceiver FSK/MSK with 2.4 GHz transceiver
<b>Transmit Power</b> .....	+10dBm to +16 dBm without amplifier

### CONTROL CHARACTERISTICS

- Remote control/programming**
  - PDA or PC through Micro-USB connector*
  - Tailorable serial port that allows any device to program the frequency, including the serial output port of the transceiver*
  - Miniature switches or jumpers to select one of four preset frequencies*

### PHYSICAL/ENVIRONMENTAL CHARACTERISTICS

<b>Power input</b> .....	5-28 VDC
<b>Power consumption</b> .....	Approximately 750 mw in transmit, 400 mw in receive
<b>Low Power Sleep Mode</b> .....	Less than 50 microamperes
<b>Weight</b> .....	Less than 8oz
<b>Size</b> .....	Less than 1 cubic inch
<b>Operating temperature range</b> .....	-20 to +50°C
<b>Connectors</b>	
<b>RF in/out</b> .....	SMA
<b>Control</b> .....	Micro-USB
<b>Power</b> .....	Solder pads

### OPTIONS

- Option 1 BW up to 500 Kb/s (uses 2.4 GHz data link)
- Option 2 Extended range wireless data link network
- Option 3 + 8dBm output power

*Specifications subject to change without notice as we improve our products*  
 For further information, contact: Wireless Innovations Inc  
 Tel. 443-324-0977, Email [info@wirelessinnov.com](mailto:info@wirelessinnov.com)