

## Exhibit 6 - Preliminary User's Manual

# **1 Introduction**

This manual describes the CX2 Technologies CX2-1100 DataHawk 100 Watt Base Station Transceiver. The CX2-1100 consists of two parts; the 1100R Receiver/Controller Box and the 1100T Transmitter Box. Together they provide base station capability for CX2 Networks, public or private, in the 220-222 MHz band.

The CX2-1100 is designed to operate under the control of the CX2 Local Site Server (LSS). In normal use the LSS selects the channel, keys/dekeys the base station, and handles data input and output.

***Note: The 1100R and 1100T are intended to be used as a set only, in conjunction with a CX2 LSS and will not operate properly otherwise. Please contact CX2 for additional information about network configuration.***

The operation of this equipment is subject to FCC regulations regarding output power, frequency modulation and frequency accuracy as codified in 47CFR§2 and 47CFR§90. Correct setup and proper maintenance are essential elements in complying with these regulations and not interfering with other's use of the radio spectrum. Please read this manual carefully, and have only qualified technical personnel perform setup and maintenance. **Unauthorized modification of this equipment may void the user's authority to operate it.**

**This device complies with part 15 of the FCC rules. Operation is subject to the condition that this device does not cause harmful interference.**

This equipment has been tested and found to comply with FCC Part 15 Class B limits. These limits are designed to provide reasonable protection against harmful interference with other equipment. However, this is no guarantee that such interference will not occur in some particular installation. The CX2-1100 generates and radiates electromagnetic energy. Consequently it may affect other digital devices or receivers in the area. The user may take steps to ameliorate this interference should it occur, such as:

- Make sure all equipment is properly grounded.
- Increase the physical separation between the CX2-1100 and the affected device or devices.
- Connect the CX2-1100 to a separate electrical outlet.
- Reorient or relocate the receiving antenna of the affected device.
- Should the problem persist, please contact CX2 for an evaluation.

## **2 Safety Information**

This equipment radiates electromagnetic energy. The following measures are recommended to minimize exposure.

**Do Not Operate the transmitter when someone is within 1 meter (3 feet) of the antenna.**

**Do Not Operate this equipment unless all RF connectors are properly connected and unused radiating ports are terminated.**

The following General Safety precautions should be observed at all times:

**This equipment operates with potentially dangerous voltages present within the case. Follow all procedures carefully to avoid electric shock hazards.**

**Do Not Use damaged cables or connectors.**

**Do Not Operate this equipment near electrical blasting caps.**

**Do Not Operate this equipment in an explosive atmosphere.**

**Make Sure this equipment is properly grounded.**

**Note: The CX2-1100 should be installed and serviced only by qualified personnel. Improper installation or use could permanently damage the device and may cause injury or death.**

**Note: There is a ten-minute delay from the time the CX2-1100 is powered up until the Transmitter can be keyed. This is to allow the frequency control circuits to reach a stable operating temperature. If it is necessary to overcome this delay for servicing the device, the RRM Configurator (See section 4.6) has that provision. Please use this override with care.**

### **3 Specifications**

Radio Service:	Private Land Mobile 220-222MHz
	47CFR§90 Subpart T
Weight:	1100R -35 lbs.
	1100T - 35 lbs.
Model number/name:	CX2-1100 "DataHawk"
Type of equipment:	Base Station Transceiver
Mounting:	19" Rack Mount
Rated Supply Voltage:	117 V AC +/- 10%
TX Frequency range:	220-221 MHz
RX Frequency range	221-222 MHz
Frequency Tolerance:	<0.1 ppm -30 to +50 C
Channel spacing:	5 kHz
Power rating:	100 W PEP
Transmitter duty cycle:	100%
Modulation:	QPSK
TX Antenna Connector:	50 ohm - Type N coax
RX Antenna Connector	50 Ohm - Mini UHF

## 4 Setup

### 4.1 Recommended Operating Environment

The CX2-1100 is designed to be operated in a clean, dry location with ambient temperatures between -10 and +40 degrees C (+15 to +105 F). The environment should be free of excessive vibration and have adequate ventilation to insure proper equipment cooling. Prolonged exposure to excessive dust or moisture may permanently damage the device or its ancillary equipment. It is recommended that backup AC power be available to insure continued operation of the network if power is interrupted.

### 4.2 Inspection

After unpacking the equipment perform a careful visual inspection of the 1100R, 1100T and all cables and connectors to be used in the installation.

- Signs of external damage to the CX2-1100 could indicate internal damage as well. **If there are indications of damage – Do Not continue with the installation. Return the damaged equipment to CX2 for evaluation and repair.**
- Pay particular attention to the connectors located in the rear of the devices, as shown in Figure 4.4 and 4.5. If damaged, these connectors must be repaired before use. **Attached connectors are not user repairable – the 1100 must be returned to CX2 for repair.**
- Do not use damaged or improper connectors or cables in the installation of the base station. Such use may cause permanent harm to the CX2-1100 and could be dangerous.
- Make sure all connectors are clean and free of grease or moisture.
- Compare the equipment to the Figures in this manual to familiarize yourself with the name, location and use of the various connectors.

### 4.3 Mounting

The CX2-1100 is to be mounted in the preassembled rack containing the duplexer, preamp, hybrids and splitters supplied by CX2. The 1100R occupies the top available slide with the 1100T on the bottom. Slide the box in until it clicks, then depress the détente on each side and ease the box in the rest of the way. **Do not power the boxes until all connections are made and checked. See following sections.**

#### 4.4 CX2-1100T and 1100R Interconnections

Make the following interconnections between the CX2-1100T and the CX2-1100R with the cables supplied.

Please refer to figure 4.4

<u>KEY</u>	<u>CX2-1100R</u>	<u>CX2-1100R</u>
<i>R1</i>	<i>MBSO 5</i>	<i>MBSO IN</i>
	<b>CX2-1100R</b>	<b>CX2-1100T</b>
<i>I1</i>	<i>XMITR I.F.</i>	<i>TX I.F. IN</i>
<i>I2</i>	<i>(Ribbon) TRANSMITTER</i>	<i>CON1</i>
<i>I3</i>	<i>12 VOLTS TO 100W XMTR</i>	<i>CON2</i>
<i>I4</i>	<i>MBSO 1</i>	<i>REF OSC IN</i>

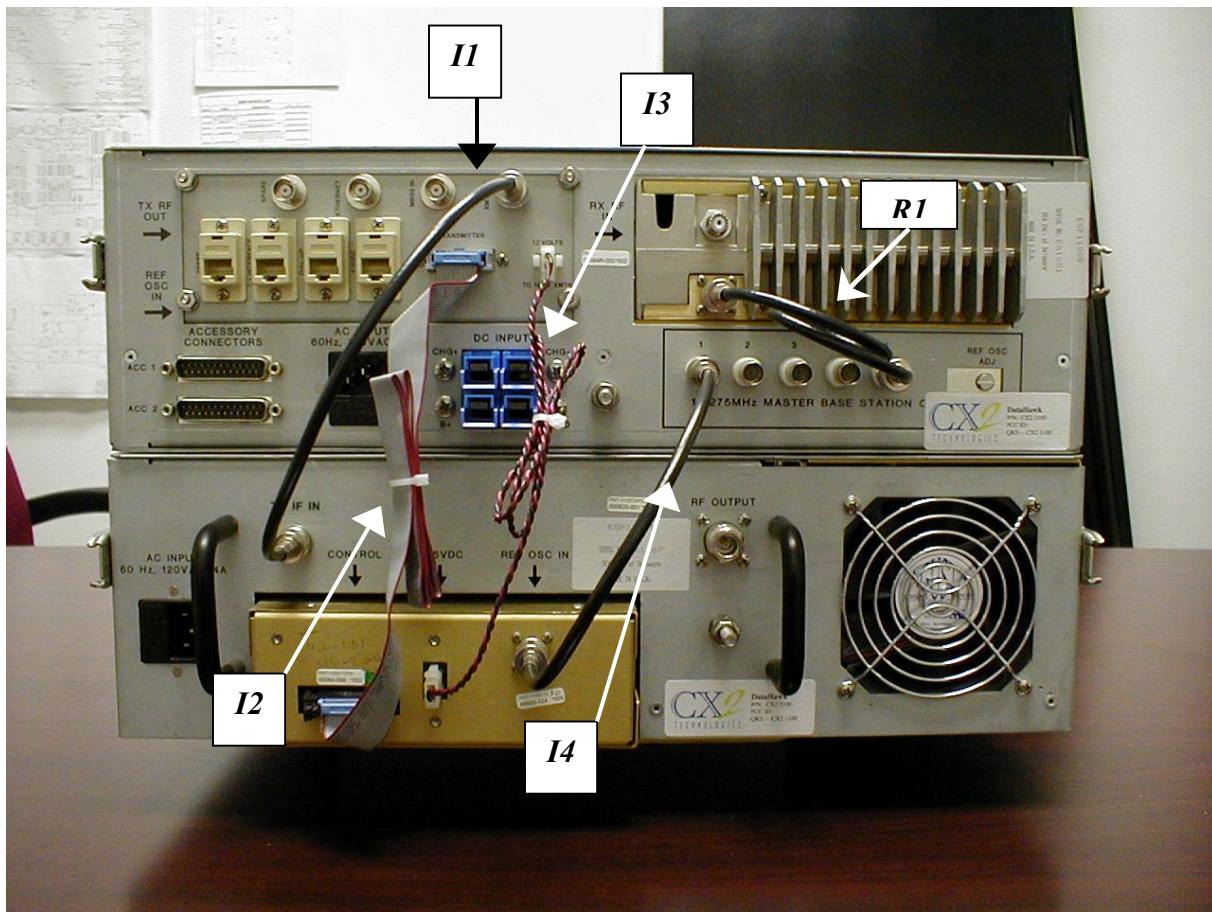


Figure 4.4

## 4.5 External Connections

Make the labeled external connections within the installed CX2-1100 rack in the following order:

1. Ground Connections (GRND)
2. RX IN
3. TX OUT
4. ACC1 to DSU
5. AC LINE

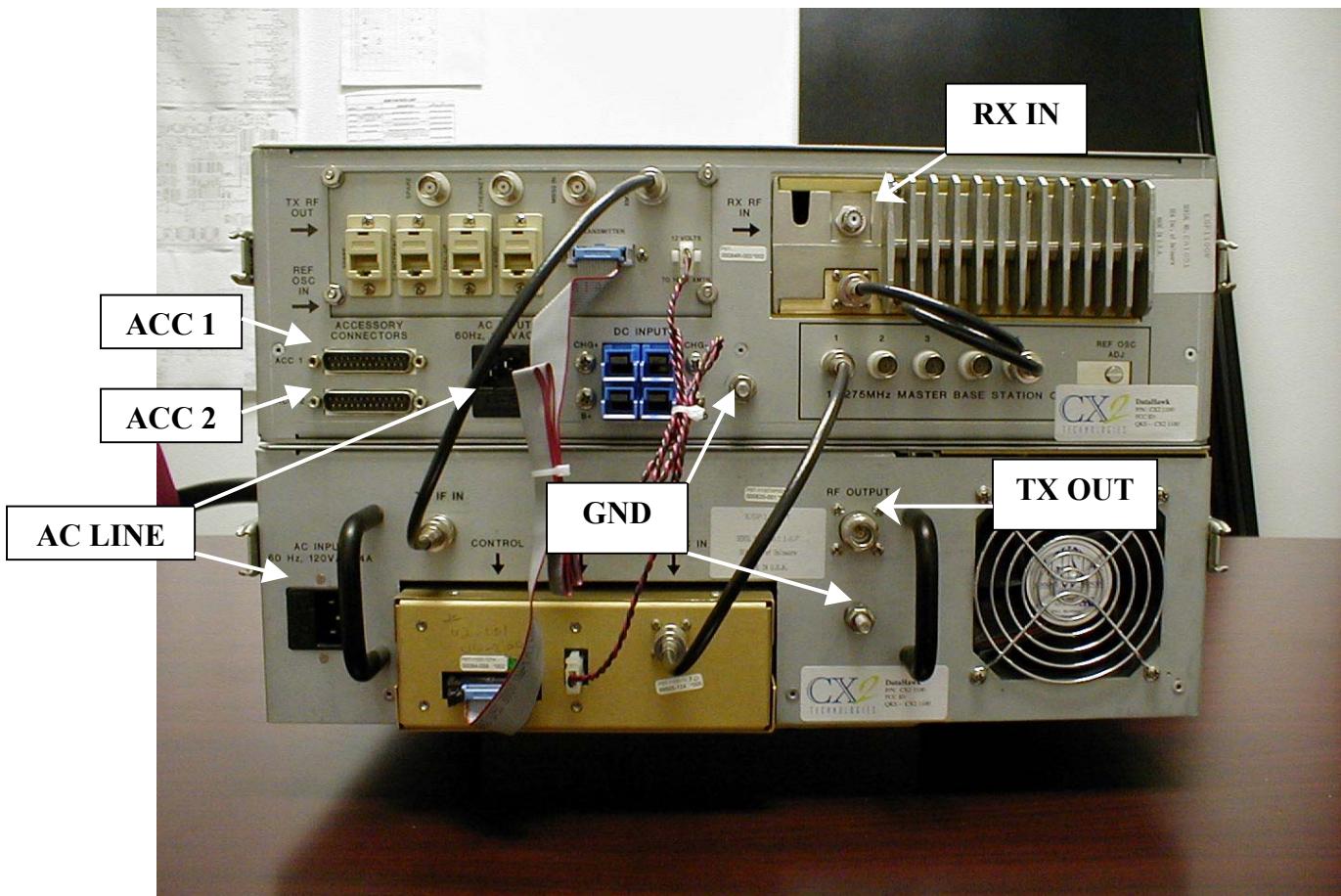


Figure 4.5

## 4.6 RRM Configurator

Final setup of the CX2-1100 is accomplished with the CX2 RRM Configurator running on a laptop. Attach COM1 of the laptop to ACC2 of the CX2-1100. Refer to the Configurator instructions for the proper procedures for your particular installation.

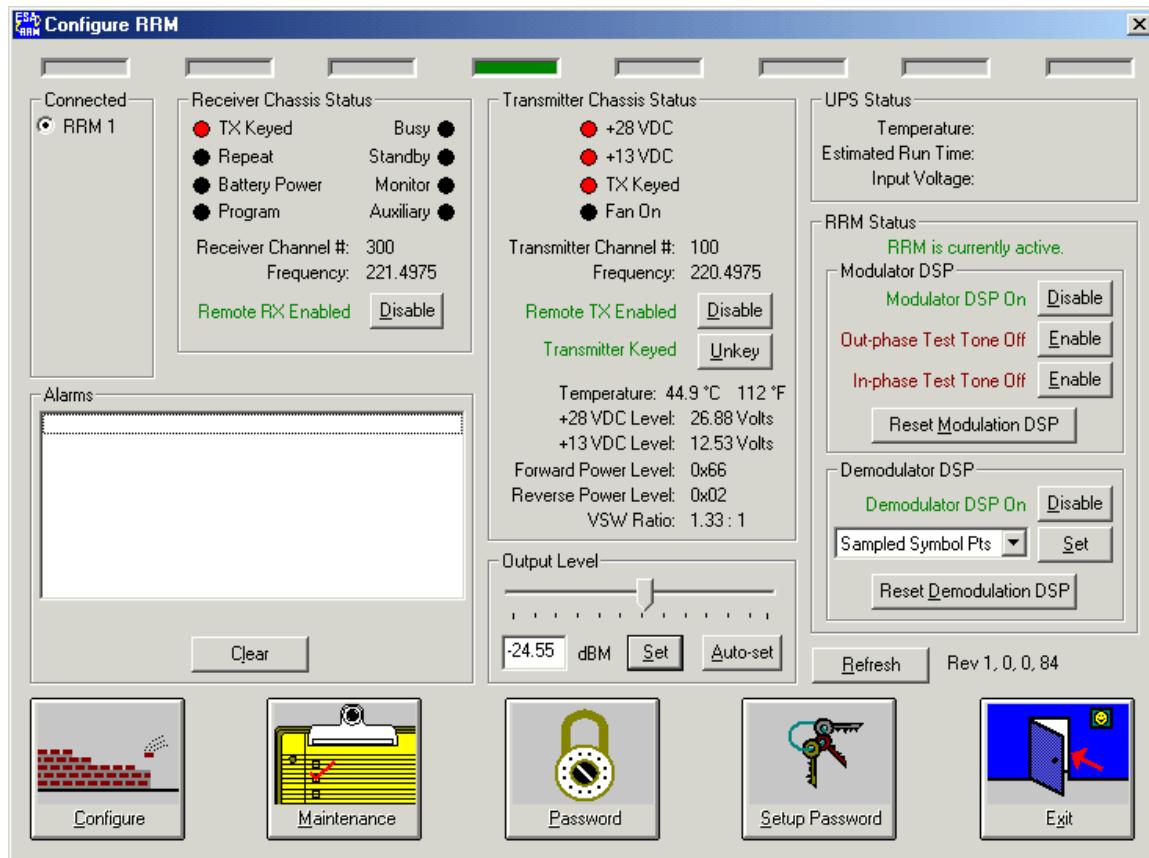


Figure 4.6