

INTERFACING KING KDT5000 MOBILE DATA TERMINAL TO ESP520DX DATA RADIO



This application note provides the basic cable wiring information for connecting a SEA ESP520DX mobile radio (with data terminal interface) to either the King MDT base terminal or King mobile terminal. Additionally, a procedure is provided for minimally configuring the PC, base and mobile terminals so that the system can be tested using the King demo application program WinDispatch. The program WinHost is the King communications port driver program which runs in the background and passes commands from WinDispatch to the base radio. The information in this application note is believed to be correct at the time of issuance but is provided strictly as a courtesy to SEA customers without warranty.

1. Minimum system requirements:

- 2 - King MDTs Model #5000 (One will be programmed for base use and the other for a mobile.) **Additional setup is required for correct operation** - refer to Appendix A for details.
- 2 - SEA ESP520DX Data Radios
- 2 - Radio to MDT interface cables (not supplied). Refer to section 2 for details.
- 1 - PC to MDT interface cable (not supplied). Refer to section 3 for details.
- 1 - PC with 32-bit Windows 95 or NT 4.0 operating system.
- 1 - Software: **King Communications CD** containing **WinDispatch program** and **document files**. Also updated **Version 2.3.47 WinDispatch.EXE**, **Winhost.EXE**, and **Host.INI** are needed.

2. PC to MDT Cable (Null-Modem Cable):

P.C. Side	MDT
<u>DB-9</u>	Side
<u>Female</u>	<u>DB-9</u>
	<u>Female</u>

2	3
3	2
6	4
4	6
7	8
8	7
5	5

3. Radio to MDT Cable:

MDT Side <u>DB-9</u> <u>Male</u>				Radio Side <u>DB-25</u> <u>Male</u>
1	----	GND	----	1
3	----	PTT	----	5
4	----	RX	----	10
5	----	+13VDC	----	13
6	----	CTS	----	6
7	----	DSR	----	20
8	----	TX	----	12
9	----	NC	----	-

4. ESP 520DX Programming:

- Program modes to match the REPEATER SYSTEM(S) which will be used or CHANNEL(S) for talkaround use if no repeater is being used. Refer to the

ESP520DX programming manual for instructions on programming for DATA operation. **MSK** data type must be selected and **PRIORITY #2** (data) LTR ID's must be identical on base and all mobiles in the data talk group.

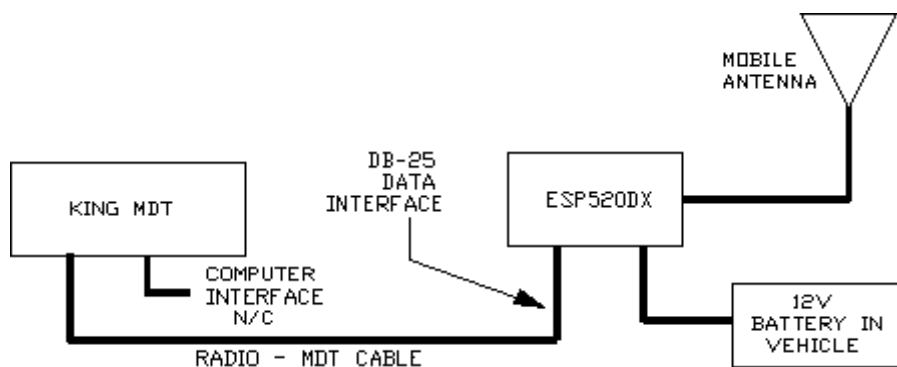
5. SEA Repeater system Programming:

- Optional: Talkaround users may bypass this section.

Program repeater(s) according to the programming manual with the correct Channel Number, Area Bit and Home Channel. Test the repeaters with a couple of mobiles in voice mode to insure system is functioning properly before using the DATA mode on the mobiles.

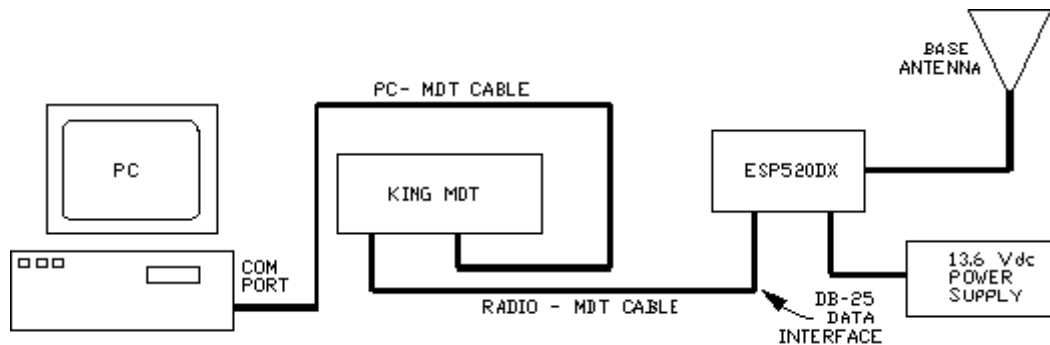
6. Mobile Station Configuration:

- A. Select a 2 or 3 digit **ID** number to program the mobile data terminals. Refer to the **DOCUMENT** section of the **KING CD** for programming the MDT with the configuration program - **EXC**. NOTE: Use Base Station system configuration to make changes in the MDTs.
- B. System Configuration:



7. Base Station Configuration:

- A. The KING MDT **ID #** must be set at **2024** for base operation. Refer to the **DOCUMENT** section of the **KING CD** for programming the MDT with the configuration program - **EXC**.
- B. System Configuration:



8. Minimum required Base Station Configuration Procedure:

- A. Load the **King Communications CD** in the CD-ROM.
- B. Select **RUN** program from Windows Taskbar. Select the CD ROM Drive and type: **SETUP** , then press return. NOTE: Setup is in the root directory of the KING CD.
- C. Follow the instructions for a **TYPICAL INSTALL**.
- D. After completing the installation, go to **Windows Explorer** and delete **Windisp.EXE**, **Winhost.EXE**, and **Host.INI** located in the directory of the installed King software. Default directory: **KING**.
- E. Install **Version #2.3.47** of the three files that were deleted above These files are available from KING COMMUNICATIONS.
- F. Run **Winhost.EXE**

NOTE: **COM 2** is the default port to install the PC cable. If another port is used, the following changes will need to be made to **PORT 2** of the **Host.INI** file:

- o **PORT X** ----- change to the COM port being used. **X = (1-4)**
- ADDRESS = COM X** ---- change to the COM port being used. **X = (1-4)**
- IRQ = ?** ----- **3 or 4 depending on port used.**

- G. While **Winhost** is running, minimize the program and run **Windisp.EXE**.
- H. With the opening main menu, select **FILE**, then select **SETTINGS**, and go to **VEHICLES**.
- I. Add the vehicle **ID #** and **Driver Name** to match the programming of the mobile MDT. Save created data, exit and return to the **MAIN MENU**.
- J. Select **DISPATCH**. Top selection under **UNIT** should have the **ID(s)** matching the mobile(s).
- K. Program is now ready to send data.

APPENDIX A

King Mobile Data Terminal Configuration Setup

Using the **EXC** utility program that is included in the **King CD** installation, you will have the ability to make changes in specific parameters of the **MDT** operation. This program will be found under the **King** directory in your task manager. The changes performed below need to be made to both the base and the mobile **MDT**. The following setup must be connected in order to make changes:

- I. Connect a power supply of **13.6VDC** to the **MDT** using either method listed below.
 - A. By using the cables specified in **SECTION 3**, you can connect an **ESP520D** to power and using the interface cable between the radio and the **MDT** to supply power.
 - B. By using the female **DB9** connector of the **MDT** (No radio is needed for this method.)

The (+) lead going to **PIN 5** and the (-) to **PIN 1**.

- II. Connect the computer to the **MDT*** as shown in the Base Station Configuration (#7).

* Make note of which serial port you are using as the EXC utility program will need to be launched using the correct port.

With power applied to the MDT and computer's serial port attached, execute the EXC utility that corresponds to the port you are using (COM 1 or 2). If the system is working correctly, it will respond with a red **UNK**. Press the "Enter" button on the keyboard several times. You should receive the same red **UNK** in response to each keyboard press of the "Enter" button. This indicates that communications between the MDT and the computer have been established. Type in the following commands listed below, pressing "Enter" after each line.

NOTE: After each "ENTER", a yellow response should come back with the "A" after each command. This lets you know that the MDT acknowledged the change.

A. **SQL + "ENTER"**

LKI 150 "ENTER"

SRT 7 1000 0 0 0 0 "ENTER"

The **SQL** command sets the squelch polarity. This must be set to (+) for correct operation with the **ESP520D**. If it is not, you will have a constant busy light on the MDT even when no RX signal is present.

The **LKI** command sets the transmitter key-up time in 10ms increments. A value of 150 is recommended to allow adequate time for data to pass through a trunking system.

The **SRT** command specifies the radio type and specific parameters for data transmission.

Once these commands are entered and the correct acknowledgement has been received, the MDTs will be ready for installation.